

UCLA INDO-EUROPEAN STUDIES

Volume 1

Edited by

Vyacheslav V. Ivanov and Brent Vine

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Program in Indo-European Studies*

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Foreword

This volume inaugurates what we hope will be an occasional series of such volumes, containing papers and reviews highlighting the research activity of the UCLA Program in Indo-European Studies. As with other similar ventures — and we here gratefully acknowledge the example and inspiration of the four volumes of *Indo-European Studies* edited by Calvert Watkins¹ — some of the items herein will eventually find their way into more formal publication venues. But, despite optimistic predictions trumpeted for some time, this age of disk-based publishing and camera-ready copy has not significantly enhanced the speed with which scholarly journals and *Festschriften* publish their contributions, nor has this technology materially affected the outrageous pricing schemes of many of the publishing companies on whom our field depends. We therefore thought it worthwhile to assemble and disseminate, if only in limited distribution, these articles and reviews on topics in Indo-European studies, at a price so reasonable that it would be more expensive to photocopy the volume than to purchase it.

The studies presented here display some of the research (but, it should be emphasized, only *some* of the research!) conducted by students and faculty in the UCLA Program of Indo-European studies over the course of the past two years or so. As is consistent with the development of the Program in recent years,² most of the contributions are essentially linguistic and philological in orientation. But broader concerns make notable appearances, especially in the longer pieces by Raimo Anttila (on PIE **aǵ-*, **ǵ^{wh}en-* and “driving and beating symbiosis” in Indo-European) and by Vyacheslav Ivanov (on comparative Hurro-Urartian, Northern Caucasian, and Indo-European material, with special attention to words for “horse” and related vehicular terminology), as well as in the latter’s shorter papers on ancient migratory terms meaning “lyre”, and on a Greek-Slavic correspondence that leads to a discussion of the expression of “invisibility” in Indo-European.

¹1972, 1975, 1977, 1981 (Harvard University, Department of Linguistics).

²For more information, see the Program’s web site at <http://www.humnet.ucla.edu/pies/home.html>.

Although we have imposed some minimal standardization with regard to matters of formatting, we have not attempted to formalize the production in certain ways that many readers may have come to expect even from desktop publishing. The slight loss in aesthetics (which we hope to upgrade in the next installment) has yielded a gain in our ability to bring the volume out in a timely fashion.

It is a pleasant duty, finally, to thank the UCLA Friends and Alumni of Indo-European Studies for financial support of this venture, as well as Angelo Mercado (graduate student in the Program of Indo-European Studies) for his indispensable editorial and computational assistance.

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Greek ῥίζα 'root' and "Schwa Secundum"

Brent Vine

1. Introductory

1.0. The root vocalism of Gk. ῥίζα 'root' is aberrant vis-à-vis its presumed cognates (Lat. *rādix*, Go. *waurts* 'id.' etc., IEW 1167), and therefore constitutes a long-standing problem of Greek phonology (see e.g. Schwyzler 1939: 352). Two recent treatments of this problem (1.1., 1.2.) have independently converged on the same solution. The weaknesses inherent in this solution (1.3.) justify the proposal of an alternative account (2., including remarks [2.4.1.] on the problematic ι-vocalism of Gk. ῥίμφα 'swiftly'), which in turn calls for more general remarks on the problem of "schwa secundum" (3.). The paper concludes (4.) with a discussion of Gk. ἰνός 'oven', the difficult root vocalism of which may yield to an analysis similar to that proposed here for ῥίζα.

1.1. In his recent book on Germanic root nouns and their prehistory, W. Griedtentrog has devoted a lengthy footnote (1995: 460n30) to a discussion of the problematic "schwundstufigen Bildungen mit i-Vokal" in Greek ῥίζα (Aeol. βῥίζα)¹ and certain presumed cognates in Celtic (e.g. Welsh *gwrysg* 'branches'). To consider first ῥίζα: under the standard assumption of a zero-grade starting point **k₁h₂d-*, there appears to be no phonologically regular way to generate i-vocalism, and Griedtentrog rightly rejects unsatisfactory attempts (by Schwyzler and Specht) to do so.² Griedtentrog concludes, then, that

¹ Very likely also Myc. *wi-ri-za*, despite uncertainty about its precise meaning; see Aura Jorro 1993: 435. However one wishes to interpret the details surrounding the much-discussed use of <βρ> in literary Lesbian, Aeol. βῥίζα at least supports the initial **k₁r-* (as opposed to **sr-*), see e.g. Bowie 1981: 80ff. ("the beta appears not to be added to any word which certainly did *not* have an original initial digamma", Bowie 1981: 82).

² Another such attempt is that of Huld 1978/9: 298 (not mentioned by Griedtentrog), according to whom ῥίζα displays the zero-grade "i-reflex for **H/*" sometimes claimed for Greek, as in δολιχός, π(ι)όλις etc., cf. also (Huld loc. cit. and 1983/4: 118) κοῖλος 'hollow' (= Alb. *thellë*), i.e.

"[v]om lautlichen Standpunkt wäre die Erklärung, daß $\rho\acute{\iota}\zeta\alpha$ etc. auf einer semantisch gleichbedeutenden Parallelwurzel $\sqrt{\mu rej(-)}d$ basiert, m. E. wesentlich einfacher", with reference to enlarged root variants "mit ähnlicher Bedeutung" $\sqrt{\mu rej\tilde{k}}$ - 'drehen, umwickeln, binden', $\sqrt{\mu rej\tilde{p}}$ - 'drehen', and $\sqrt{\mu rej\tilde{t}}$ - 'drehen' (IEW 1158ff.); thus, in his view, "[d]ie Annahme einer weiteren Variante $\sqrt{\mu rej(-)}d$, von der die schwundstufige Form in urgriech. $\sqrt{\mu rid}$ - fortgesetzt wäre, wäre daher nicht problematisch".

1.2. Griepentrog's monograph attempted, with some success, to take account of bibliography that became available later than the original version of his dissertation. He did not, however, consider P. Schrijver's book (1991) on the reflexes of the Indo-European laryngeals in Latin. Here (1991: 183), in a discussion of Lat. $rādīx$ < $\sqrt{\mu r(e)h_2d}$ -, Schrijver observed that "[t]he root $\sqrt{urh_2d}$ - must be distinguished from $\sqrt{\mu rid}$ - in Gr. $\rho\acute{\iota}\zeta\alpha$, Lesb. $\beta\rho\acute{\iota}\sigma\delta\alpha$ and in W. $gwrysg$ 'branch' < $\sqrt{\mu rid-sko}$ -, OIr. $frén$ 'root' < $\sqrt{\mu rid-no}$ -. Schrijver takes the same position in his more recent work on British Celtic phonology, where he asserts (1995: 174) that "OIr. $frén$... and W $gwrysg$... cannot reflect this root [scil. $\sqrt{\mu r(e)h_2d}$ - — add. BV] but rather go back to PCl. $\sqrt{\mu rid-nā}$, $\sqrt{\mu rid-skV}$ - < Pre-Cl. $\sqrt{\mu rd-nā}$, $\sqrt{\mu rd-sk}$ - or $\sqrt{\mu rid-nā}$, $\sqrt{\mu rid-skV}$ -, respectively", and that "[i]f $\sqrt{\mu rid}$ - is the correct reconstruction, it may be compared with Gr. $\rho\acute{\iota}\zeta\alpha$ ", noting finally that "a hypothetical $\sqrt{\mu rig}$ - would account for these forms just as well".

1.3. As recalcitrant as the *i*-vocalism of $\rho\acute{\iota}\zeta\alpha$ (and W. $gwrysg$, etc.) may be, the solution independently arrived at by Griepentrog and Schrijver must be regarded with the utmost suspicion.³ To begin with, it is far from clear that

$\sqrt{\mu r\acute{\iota}\zeta\alpha}$ -, allegedly < $\sqrt{\mu rH-lo}$ -. But there are various problems with this approach (which therefore need not be pursued at great length here): to begin with, the zero-grade "i-reflex for $\sqrt{H}/$ " in Greek has been claimed only for $\sqrt{R}h_1$ ($\sqrt{h_1}$ is possible, but not demonstrable, for $\rho\acute{\iota}\zeta\alpha$), and in any case the expected result would be $/oRi/$, in which case the development $\sqrt{\mu ridja} > \sqrt{\mu ridja}$ remains unexplained. As for $\kappa\acute{o}\iota\lambda\omicron\varsigma$: an *o*-grade $\sqrt{\mu rH-lo}$ - would be expected to undergo H-loss by "Saussure's Law" ($\tau\acute{o}\lambda\mu\alpha$, $\omicron\theta\alpha\rho$ etc.), nor is Gk. $-i\lambda\omicron-$ morphologically problematic in any case.

³ A similar account is already found in Joseph 1980: 206, adding Toch. B $witsako$ 'root' to $\rho\acute{\iota}\zeta\alpha$ as a possible reflex of an original $\sqrt{\mu rid}$ -. The Tocharian form, however, is best taken otherwise (see now Isebaert 1991: 141 and Ringe 1996: 146, both with further references).

a series of enlarged root-variants **ureik-*, **ureip-*, **ureit-* of rather ill-defined meaning (variously 'drehen, winden, binden' etc.) afford a legitimate semantic comparison with a nominal prime meaning 'root' (as clearly, at any rate, in $\rho\acute{\iota}\zeta\alpha$). Morphologically, $\rho\acute{\iota}\zeta\alpha$ (descriptively **uridjā*) is clearly a devī-formation,⁴ and as such is a good candidate for derivation based on a root noun, this being attested at least indirectly in Gmc. **wurt-* (Go. *waurts* etc.) < **urh₂d-* (if not also in **wrōt-* [OIc. *rót*] < **uroh₂d-*, cf. Griepentrog 1995: 458ff.). Under these circumstances, the gambit of setting up an otherwise unattested enlarged stem "**ureid-*" (beside **ureik-* 'drehen' etc.) as a way of "explaining" the difficult vocalism of $\rho\acute{\iota}\zeta\alpha$ and certain Celtic forms is deeply unsatisfying, and, what is more, methodologically suspect, unless all other possible solutions for explaining these vocalisms secondarily on the basis of the IE 'root' word can be definitively excluded. This does not, in fact, appear to be the case.

The Celtic material from which Schrijver prefers to separate W. *gwrysg* and OIr. *frén* principally includes MidW. *gwreid*, W. *gwraidd* 'roots' and OCo. *grueiten* gl. radix, the phonological interpretation of which Schrijver has examined at some length (1995: 173ff.), in the context of an extended investiga-

⁴ Thus also perhaps Lat. *rādx*, although the form is phonologically ambiguous between full grade **ureh₂d-ih₂-(k-)* and zero grade **urh₂d-ih₂-(k-)* (Schrijver 1991: 183, Griepentrog 1995: 461, Sihler 1995: 179); here also perhaps Arm. *armat* (g. *armatoy*) 'root', if Pisani's analysis (1966: 235) is correct (< **mrat-* < **urat-* < **urād-*). Andrew Sihler (p.c.) points out to me that the devī-status of Lat. *rādx* may be suspect, since this appears to be one of the only forms in *-ik-* that does not refer specifically to female beings or relate to female sexuality more or less explicitly (cf. *iūntx* 'heifer', *mātrix* 'womb; breeding-animal; progenitress', *genetrix* 'one who brings forth; mother', *nūtrix* 'nurse'); but the spread of *-ik-* is itself a Latin innovation in any case (see e.g. Schrijver 1991: 152 on Etr. *uni* and Lat. *iūntx*, and the **nūtri* underlying *nūtrire*), and so it does not seem impossible that Lat. *rādx* (which is not, in fact, totally isolated in this respect: cf. *cerutx* '(nape of the) neck', possibly a devī-form itself, along with a whole series of body-part terms in *-ic-*, on which see Nussbaum 1986: 4f.) could continue an old devī-form that is essentially extraneous to a later semantic specialization that would have begun with one or more accidentally-preserved forms like *genetrix* (: Ved. *jānitri*) — cf. the series of body-part terms noted above, as well as a series of bird names (*cornix* 'crow', *coturnix* 'quail', etc.). On Gk. $\rho\acute{\alpha}\delta\iota\varsigma$ 'branch, frond' [Nic., D.S.] as a probable loan from Latin, see Griepentrog 1995: 460n28.

tion into the problem of the treatment of PIE *CRHC* in Celtic. Abstracting away from certain complexities involving British *i*-affection, it emerges that the British forms are probably best taken to continue a Proto-Celtic **μrad-jo-*. Indeed, although he regards this particular example as less than certain (due in part to ambiguities arising from the *i*-affection complications), Schrijver does go on to suggest, on the basis of his analysis of a series of other less ambiguous forms, that the phonologically regular result of *CRHC* in Celtic is to be interpreted as follows: *CRHT* > *CRĀT* (*T* = **t* and possibly **s*) and *CRHR* > *CRĀR* (*R* = nasals, esp. **n*). Thus, according to Schrijver's system, MidW. *gwreid* etc. < **μrad-jo-* (barring certain ambiguities) would be phonologically regular, just as in OIr. *srath* 'valley, meadow, etc.', W. *ystrad* 'vale' < Proto-Celt. **strāto-* < **stṛh₃-to-* (ultimately with OIr. *sernaid* 'arrays'), or OIr. *rath* 'grace, property', W. *rhad* 'id.' < Proto-Celt. **φrāto-* < **pṛh₃-to-* (1995: 178f.). It is surely significant, however, that at least some such forms are found beside what may be called "neo-aniṭ" variants⁵: thus beside OIr. *srath*, the verb *sernaid* itself makes a descriptively aniṭ verbal noun/past ptcple. (-)*sreth* (as if from aniṭ **stṛ-to-*), cf. -*mleth* (as if from aniṭ **m_l-to-*) beside *melid* 'grinds' (root **melh₂-*). Phonologically, "neo-aniṭ" (-)*sreth* beside *srath* (whether the latter is the phonologically regular reflex of a *CRHC* form [Schrijver] or is analogical [McCone and others]) recovers exactly the pattern OIr. *frén* (Proto-Celt. **μrid-nā*), W. *gwrysg* (Proto-Celt. **μrid-skV-*) beside MidW. *gwreid* (Proto-Celt. **μrad-jo-*). To be sure, the development of "neo-aniṭ" forms like (-)*sreth* and -*mleth* is relatively easy to understand in the context of echt-aniṭ participles and *t*-preterites,⁶ whereas derivational links among forms like MidW. *gwreid*, OIr. *frén*, and (in the case of *frén*) hypothetical zero-grade forms in **-no-* are much more difficult to substantiate. Nevertheless, once the existence of the pattern (-)*sreth* : *srath* is acknowledged, and given the possibility of zero grades in **-no-* and **-skV-* (at least some of which may have had the form **-Rd-no-*, **-Rd-skV-*), we cannot so easily exclude the possible development of "neo-aniṭ" (Proto-Celt. **μrid-* (beside **μrad-*), even if the details must

⁵ Cf. McCone 1991: 106f., though with different assumptions about the regular treatment of *CRHC*.

⁶ See McCone 1991: 106 for the process.

remain elusive. We are at least justified in exploring methods of explaining Gk. $\rho\acute{\iota}\zeta\alpha$ without recourse to a root-variant $*\mu\acute{r}e\acute{i}d-$, an implausible construct in itself, and not demonstrably necessary even for Celtic.

2. Gk. $\rho\acute{\iota}\zeta\alpha$ and “schwa secundum”

2.0. We must begin by briefly reviewing certain facts about the phonological and morphological context of $\rho\acute{\iota}\zeta\alpha$, beginning with the latter.

2.1. As already noted (1.3.), Gk. $\rho\acute{\iota}\zeta\alpha$ (< Pr.-Gk. $*\mu\acute{r}id\acute{i}\check{s}$) is generally agreed to be a devī-formation (most likely built to a root noun), comparable to Lat. *rādx*. Although Greek has generally given up the ablaut otherwise to be expected in devī-formations (a proterokinetic type, in IE terms), distinct and well-known traces survive: it suffices here to recall the opposition between Att. $\gamma\lambda\omega\tau\tau\alpha$ /Ion. $\gamma\lambda\omega\sigma\sigma\alpha$ and Ion. $\gamma\lambda\acute{\alpha}\sigma\sigma\alpha$ ‘tongue’, beside the root noun preserved in $\gamma\lambda\omega\chi\epsilon\varsigma$ ‘beards (of corn), awns’ (Hes.⁷ Sc. 398, cf. Schindler 1972: 80).⁸ Thus the difficult vocalism of $\rho\acute{\iota}\zeta\alpha$ (barring an appeal to a different root altogether, cf. 1.3.) is likely to find its explanation in the context of devī-alternations, and specifically in zero grades of the general type Ion. $\gamma\lambda\acute{\alpha}\sigma\sigma\alpha$.

2.2. The above considerations suggest, then, that Greek could have inherited a proterokinetic paradigm with the following alternation:

nom. $*\mu\acute{r}éh_2d-i\check{h}_2$

gen. $*\mu\acute{r}h_2d-jéh_2s$ etc.⁹

⁷ Not “Hesych.” (Griepentrog 1995: 461).

⁸ Additional traces involving accentual alternations are somewhat more controversial: thus Rix 1976: 130 on $\acute{\alpha}\gamma\upsilon\iota\alpha$ /dat.sg. $\acute{\alpha}\gamma\upsilon\iota\acute{\alpha}$ ‘street’, similarly Schwyzler 1939: 381 on Ion. $\delta\acute{\rho}\gamma\upsilon\iota\alpha$ /gen.sg. $\delta\acute{\rho}\gamma\upsilon\iota\acute{\alpha}\varsigma$ ‘length of the outstretched arms’ (assuming $*-ih_2-/*-jéh_2-$), vs. the inner-Greek conception of Kurylowicz 1958: 119ff., apparently followed by Lindeman 1990: 169 = 1996: 186 (but see Kurylowicz 1968: 94f.).

⁹ Even if Melchert (1994: 241f., following Wackernagel and others) is correct in his tentative suggestion that the $*-ih_2-/*-jéh_2-$ devī-ablaut is in some way a secondary development from an original non-ablauting $*-ih_2-$ formation, an ablauting proterokinetic paradigm is surely, as Melchert admits, a “permitted” reconstruction of the data for at least some stage of IE. (I am grateful to Joshua Katz for reminding me of Melchert’s suggestion.)

If, as is shown by alternations like γλῶσσα/γλάσσα, the devī-ablaut in this form was maintained into the Proto-Greek period, the above paradigm would have faced the serious inconvenience (noted explicitly by Griepentrog¹⁰) that both **urh₂d-* and **urh₂d-* would yield Pr.-Gk. /*urād-*/. It might be assumed, at first glance, that the simplest response would have been to eliminate the ablaut and generalize /*urād-*/. But even if devī-ablaut has ended up being almost completely eliminated in Greek, we have no reason to expect that this word should have belonged to the vanguard of this process, and Greek did not end up with **ῥᾱζ-* in any case. It is thus necessary to assume, rather, that in the first instance, a non-alternating /*urād-*/ at the time devī-ablaut was still being maintained would have developed a new alternant, most likely occupying the zero-grade slot. Only later, with the general loss of devī-ablaut, would one of these alternants have been eliminated.

2.3. The nub of the problem, then, can be framed in these terms: given a paradigm with proterokinetic accent but lacking concomitant vocalic differentiation in the stem, i.e.

nom. /*urādja*/

gen. /*urādjiās*/ etc.

how could a new weak stem be devised, with the general shape /*urVdjiās*/ (for *V* ≠ /*ā*/)? We have, in other words, a classic situation involving so-called "morphological zero grade", of a sort popularized by Kurylowicz (see in general Joseph 1980, 1982), and which continues to be regarded with suspicion (recently e.g. Schrijver 1995: 168ff., 189ff.). Nevertheless, the environment /*urVdjiās*/ can be assessed in almost purely phonological terms. Assuming (as one must, given the morphological context) that a syllabification /*urV-*/ (and not /*urV-*/ or /*ur(r)V-*/) is a necessary starting point, an actual zero-grade sequence /*ur\$diās*/ would correspond almost perfectly to the phonetic environment seen in such forms as /*p\$tnā-*/ > *πίτνημι* 'spread out', /*sk\$dna-*/ > *σκίδναμι* 'be scattered', /*s\$drū-*/ > *ἰδρῶ* 'seat', /*k^w\$tμor-*/ > (Hom.) *πίσυρες* 'four',¹¹ with a widely-acknowledged treatment calling for an

¹⁰ Similarly already Joseph 1980: 207.

¹¹ Perhaps also (with secondary rounding of /*i*/ between labiovelars) collective **k^wkwl(H)ēh₂* > *κύκλα* 'wheels' (Eichner 1985: 134ff., esp. 139n31, and apud Mayrhofer 1986: 176n334; cf. also

epenthetic vowel (corresponding to an entity traditionally referred to as "schwa secundum") that appears in Greek as /i/ in forms derived from obstruent clusters of this type (i.e. *(s)T\$TRV- or *s\$TRV-).¹² Under the assumption that /ɣr\$ɗjās/ would be treated in the same way as /p\$tnā-/ etc., the predicted result would be /ɣridjās/, and the subsequent generalization of this stem /ɣridi-/ would account directly for Gk. ῥίζα.

2.4. It remains to comment briefly on several loose ends this analysis may appear to leave.

2.4.1. The objection that a sequence /ɣrdjās/ should in principle have been vocalized as /ɣrdjās/ has already been answered (2.3.): with strong forms of the shape /ɣrād-/, paradigmatic pressure would surely have maintained the same syllable-onset (thus /ɣrṽd-/) in the weak forms. A potentially more serious objection concerns the specification of the phonetic environment for the epenthesis process in question. It has generally been assumed (cf. the notations "**(s)T\$TRV-/*s\$TRV-" above, with the references in n. 10) that the epenthetic vowel arises between (non-sonorant) obstruents, of which the first may be /s/ (cf. /p\$tnā-/ etc., cited above); but in /ɣr\$ɗjās/, the leftmost portion of the consonantal conditioning consists of a sonorant cluster /ɣr-/. In principle, this may simply indicate that the phonetic conditioning of the rule as generally conceived is excessively restrictive, especially since additional material with sequences similar to that in /ɣr\$ɗjās/ can be found in Greek (i) and (as is in fact widely assumed) elsewhere (ii):¹³

(i) Within Greek, the adverb ῥίμφα [Hom.+] 'lightly, swiftly' has been plausibly compared with Lith. (*i-*)*rangùs* 'nimble, supple' (among other Baltic

Oettinger 1993: 212). Despite Meier-Brügger (1990), Gk. κυλλός 'crooked, crippled' is not likely to be a case of this general type, as I discuss elsewhere (1999: §3.3.3.).

¹² Cf. Schindler 1977: 31, Peters 1980: 98f. (ἰδρόω), Mayrhofer 1986: 175ff., Ruijgh 1995; the question of the phonetic environment is treated in more detail in 2.4.1., directly following. Note, incidentally, that the tonic accent in some of the forms in question (πίτνημι, σκίδναμαι, πίσυρες, κύκλα) is in all cases susceptible of being explained as secondary.

¹³ Interestingly, Schindler himself already noted (loc. cit., n. 10 above) that in connection with the process "PPRV → PVPRV" (in his informal notation), "[t]he exact contexts for this rule ... are ... not completely understood at present".

material) and OHG (*ge*)*ringi* 'leicht, rasch' (see Schwyzler 1939: 302 and IEW 1155). Schwyzler's preform **ῥέγχα*, however, assumes an original full grade, with secondary *ε* > *ι* conditioned by the following nasal (1939: 275, similarly Ehrlich 1910: 16, followed by Güntert 1916: 25, both with earlier references). But this account is problematic: to begin with, by Schwyzler's own admission (275), "Nasalwirkungen sind nur in einzelnen Wörtern und Formen einzelner Dialekte kenntlich oder erhalten"; thus, apart from forms of the type Arc. (ptcple.) -*μινος*, and a small number of isolated gloss words, there is scarcely another Homeric form of this type quotable (let alone an adverb in -*α* possibly related to an old *u*-stem, of the familiar type — and in the same semantic field as — Hom. *τάχα* [*ταχύς*], *ὤκα* [*ὀκύς*], both 'swiftly'). There is, moreover, the morphological fact that the bulk of such adverbs in Homer show zero grade of the root (Hom. *κάρτα*, *λίγα*, *λίπα*, *πύκα*, *σάφα* etc.), which is a systematic and probably archaic feature, as Ruijgh has discussed in some detail (1980, cf. more recently Tremblay 1996: 57n96 [*κάρτα* and a number of other adverbial types with zero grade]). It is evidently preferable on both counts to consider *ῥίμφα* a zero grade, which would thus derive (in Proto-Greek terms) from a /*ṽr\$nhu*/ or /*ṽr\$nh^{wh}a*/, with precisely the same onset (and with the same epenthetic treatment) as /*ṽr\$djās*/.¹⁴

(ii) Outside Greek, the epenthetic vowel sometimes referred to as "schwa secundum" surfaces with different vowel quality, thus typically /*a*/ in Italic and Celtic (for Italic, cf. Lat. *quadru-* '4-' beside Hom. *πίσυρες*, 2.3.). It is often considered that, beside the **meḡ-h₂*- of Gk. *μέγας* 'great' etc., Lat. *magnus* 'id.' (with material elsewhere in Italic: O. *mais* 'maius' etc.) and corresponding Celtic material (OIr. *mál* 'prince, chief' etc.) derive from zero-grade contexts

¹⁴ The maintenance of the onset /*ṽr-*/ could be attributed either to a parallel *u*-stem adjective (if this was of the type *ἡδύς* 'sweet', with full grade, cf. Lith. (*į-*)*rangùs*), or to a parallel *s*-stem abstract with full grade (of the type *βένθος* 'depth': *βαθύς* 'deep'); under the assumption of an original **ṽréngh-es-*, the latter would in any case not be expected to survive the *homonymie fâcheuse* created by *ῥέγχος* n. 'snoring', a variant of *ῥέγκος* [Aesch.+] attested as early as the Hippocratic Corpus, and conceivably much older. Ruijgh's own attempt to explain the vocalism of *ῥίμφα* (1980: 192n19) is clearly a counsel of despair ("une déformation expressive de la racine de *ρίπτω* 'jeter avec vivacité'").

comparable to those seen in /pʰt̪nā-/ > πίτνημι etc.,¹⁵ except that the leftmost consonant is a resonant (thus *magnus*, OIr. *mál* < /mʰgno-/ , /mʰglo-/).¹⁶ Similar examples include Lat. *labia* and *labra* 'lips' (/lʰbjo-/ , /lʰbro-/) beside the clear *e*-grade in Gmc. (Eng. *lip* etc.) and Anatolian (Hitt. *lilip*-, *lip*- 'lick');¹⁷ and Lat. *nassa* 'wicker basket', OIr. *nascid* 'bind' (among other Celtic material) beside *o*-grade forms in Gmc. (Eng. *net* < Gmc. **nati*-, etc.) and a lengthened *ō*-grade in Lat. *nōdus* 'knot' (cf. OIc. *nót* 'large net'), with *nassa* and OIr. *nascid* ultimately rooted in prototypical zero-grade contexts (/nʰd̪tā/ < *tō*-ptcple. **nd-tō*-, /nʰdsk-/ < *sḱ*-present **nd-sḱé/ō*-). Detailed discussion of these and similar forms is provided by Schrijver (1991: 477-485, see also Rix 1996: 160f., Meiser 1998: 65), who arrives at an extremely similar conception in terms of "the rise of an Italo-Celtic *-a-*" according to a process statable as **R̥D > *RaD /__ C*".

2.4.2. One might further object that given strong forms /ʷrād-/ (cf. 2.3.), a new "morphological zero grade" might be expected to have developed weak-stem forms /ʷrād-/ (2.2.) — cf. γλάσσα itself, as well as the widespread (and largely secondary) ablaut pattern CāC : CāC (in Proto-Greek terms). To this may be offered the following points:

¹⁵ So Maryhofer 1986: 176, following Joseph 1982: 32.

¹⁶ Sihler (1995: 99n1) prefers to regard Italic and Celtic **mag-* as unrelated to the **meḡ-(e/o)h₂-* of Indo-Iranian, Greek, Anatolian, and Germanic. But the objections there registered are mitigated to some extent by the more complex morphological conception indicated by the notation **meḡ-(e/o)h₂-* (vs. Sihler's **meḡH₂-*) (see Mayrhofer 1994: II.338, with rich bibliography), as well as the conception of **meḡ-(e/o)h₂-* as demonstrating secondary "Caland system" alternations (see Pinault 1979). Here note also the possible **meḡh₂-néμ-* in Hitt. *maknu-* 'groß machen' (Neu 1996: 172n152, following Oettinger 1979: 98); similarly Hamp 1998: 325 on possible **mag-* forms in Phrygian and Tocharian.

¹⁷ Schrijver (1991: 479), citing Latin and Germanic material, observes that "[g]iven the limited distribution, the etymon may not be of IE. origin", but he appears unaware of the Anatolian data (which now include Luv. *<lapan(a)-* 'salt-lick' and its derivatives, Melchert 1993: 125 s.v. and Watkins 1997; the Hitt. spelling *lipp-* is an error [see Watkins 1997: 33] and does not compromise the IE **b-*.) On the morphology of the Gmc. forms (perhaps ultimately involving an *s*-stem **lēb-es-*) see now Wagner 1997, Hamp 1998: 337-8.

(i) The initial dilemma raised by non-alternating / $\mu\text{r}\ddot{\text{a}}\text{d-}/$ could in principle have elicited more than one attempted solution (e.g. dialectally, or at different chronological strata), such as / $\mu\text{r}\text{id-}/$ (by the phonologically regular treatment of a zero grade / $\mu\text{r}\$d\dot{\text{i}}\ddot{\text{a}}\text{s-}/$, as described above), or / $\mu\text{r}\ddot{\text{a}}\text{d-}/$ (via shortening of full grade / $\mu\text{r}\ddot{\text{a}}\text{d-}/$). Even if the former was generalized in such a way as to become the “standard” form for ‘root’, the latter could be vestigially attested in forms of the sort $\rho\acute{\alpha}\delta\alpha\mu\text{o}\varsigma/\rho\acute{\alpha}\delta\alpha\mu\text{o}\varsigma$ [LXX, Suid., Hsch.] ‘bough, branch’, $\rho\acute{\alpha}\delta\alpha\mu\epsilon\dot{\text{i}}$ · $\beta\lambda\alpha\sigma\tau\acute{\alpha}\nu\epsilon\text{i}$ [Hsch.]. While it is true that the vocalism and stem-formation of parallel forms like $\rho\acute{\alpha}\delta\alpha\mu\text{o}\varsigma$ [Hsch.], $\acute{\alpha}\rho\acute{\alpha}\delta\alpha\mu\text{o}\varsigma$ [AP, Thphr., Call., Nic.] may point to the involvement of non-IE (or at least non-Greek) material (thus e.g. Schrijver 1991: 183, 1995: 174), it is not excluded that the shape $\rho\acute{\alpha}\delta\text{-}$ itself arises from contamination of $(\acute{\alpha})\rho\acute{\alpha}\delta\text{-}$ with a / $\mu\text{r}\ddot{\text{a}}\text{d-}/$ ultimately derived from a remodeled / $\mu\text{r}\ddot{\text{a}}\text{d-}/$.

(ii) Nevertheless, one may question the premise that a shortened / $\mu\text{r}\ddot{\text{a}}\text{d-}/$ might be expected in the first place. The pattern $\text{C}\ddot{\text{a}}\text{C} : \text{C}\ddot{\text{a}}\text{C}$, however widespread it may be, is mainly attested in verbal derivation ($\lambda\acute{\epsilon}\lambda\eta\theta\alpha : (\lambda\epsilon)\lambda\alpha\theta\epsilon\dot{\text{i}}\nu$, $\lambda\alpha\nu\theta\acute{\alpha}\nu\omega$ etc., see e.g. Kimball 1988), and it is unclear that sufficient motivation could be found for an analogically shortened / $\mu\text{r}\ddot{\text{a}}\text{d-}/$, given the paucity of $\text{C}\ddot{\text{a}}\text{C} : \text{C}\ddot{\text{a}}\text{C}$ forms in relevant nominal categories. Thus among root nouns, there is virtually no evidence for such alternations, apart from the isolated $\pi\alpha\kappa\text{-}$ ‘hare’ (acc. $\pi\acute{\alpha}\kappa\alpha$, Aesch. Ag. 137) beside the equally isolated $\pi\tau\acute{\alpha}\kappa\text{-}$ (Aesch. Eu. 326 codd. $\pi\tau\acute{\alpha}\kappa\alpha$, with $\pi\tau\acute{\omega}\kappa\alpha$ normally printed, cf. $\pi\tau\acute{\omega}\xi$ ‘hare’ [Il.+]).¹⁸

(iii) The superficial comparison with the vocalism of $\gamma\lambda\acute{\alpha}\sigma\sigma\alpha$ is equally questionable, and does not in fact support the creation of a / $\mu\text{r}\ddot{\text{a}}\text{d-}/$. The central fact is that the ablaut pattern in $\gamma\lambda\acute{\omega}\sigma\sigma\alpha/\gamma\lambda\acute{\alpha}\sigma\sigma\alpha$ (cf. $\gamma\lambda\acute{\omega}\chi\epsilon\varsigma$ [2.1.], and $\gamma\lambda\omega\chi\dot{\text{i}}\nu\text{-}$ ‘point’) is not directly comparable to that assumed above for the ablauting pre-forms of $\rho\acute{\iota}\zeta\alpha$. Given the comparison of $\gamma\lambda\acute{\omega}\sigma\sigma\alpha/\gamma\lambda\acute{\alpha}\sigma\sigma\alpha$ with Late Common Slavic **glogŭ* (pan-Slavic, generally ‘hawthorn’ in North Slavic languages, locally also other trees with red haws; details in Trubačev 1979: 136), the length in $\gamma\lambda\acute{\omega}\sigma\sigma\alpha$ is best interpreted in terms of lengthened grade, as opposed to laryngeal lengthening in a sequence **gleh₃gh-* or **glh₃gh-*

¹⁸ Details in Schindler 1972: 95, cf. Hackstein 1992: 141n10 on $\kappa\alpha\tau\alpha\pi\tau\alpha\kappa\acute{\alpha}\nu$ (Aesch. Eum. 352).

(in these terms e.g. Huld 1997: 79 with n. 11). This is because, while Slav. *glogŭ could in principle reflect a *gl_hgh- with vocalized laryngeal, showing the treatment seen in initial syllables with cluster onset (as in, say, Late Com. Slav. *sporŭ 'abundant' < *sph₁-ro-/ *sp^hh₁-ro- or *sph₂-ro-),¹⁹ this would only be conceivable if the expected zero grade *gl_hgh- were resyllabified with onset /gl-/, presumably after a related full-grade form, for which there is no evidence in Slavic.²⁰ Thus *glogŭ should continue a plain o-grade *glogh-o-, while γλάσσα reflects the regular result of zero grade (devī) *gl_hgh-*ī*h₂-s- etc., and the vocalism of γλῶσσα (replacing an "ideal" devī nom. *gl_hgh-*ih*₂ > **γλέσσα) is analogical to the lengthened grade of the root noun (γλῶχες, cf. 2.1.), which likewise appears in the derivative stem γλωχίν-. There is, then, little reason to expect a weak stem-form /xrād-/ on the basis of γλάσσα.²¹

2.4.3. Finally, as to the question of why the weak stem-form /xrid-/ (as opposed to strong /xrād-/) ended up being generalized in Greek: the details of such a process are clearly beyond recovery. It can be noted, however, that a paradigm (Pr.-Gk.) *xrād-/ *xrid-, with such a highly marked vocalic alternation, would almost inevitably have generalized one or the other alternant; as for the choice between the two, this could have been related to factors such as the relative frequency or prominence of various case usages, where weak case forms are in this instance equally likely, if not more likely, to have played a role: thus gen. sg., dat. sg., dat. pl. account for five of the eight Homeric attestations of ῥίζα, including the fixed phrase 'from the roots' (= Eng. '[pull up/out, etc.] by the roots', 'from the roots up'), Φ 243 ἡ δ' ἐκ ῥιζέων ἐπιποῦσα, ψ 196 ἐκ ῥιζης προταμών.

3. "Schwa secundum indogermanicum" vs. "schwa secundum (prae)graecum" ("... (prae)latinum", etc.)

¹⁹ On the possible reconstruction with *h₂ for this root (as opposed to the traditional *h₁, still e.g. LIV 532), see Jasanoff 1994: n. 19 (based on a suggestion of A. Nussbaum).

²⁰ Similarly already Schindler (1972: 80), arguing against *gleh₃gh-: "für Rə statt R_h kenne ich sonst keine slavischen Beispiele".

²¹ I am indebted to my colleague Henning Andersen for discussion of the Slavic material in this section.

3.0. Without undertaking a full-scale *apologia pro schwa secundo*, we may nevertheless comment briefly on the continuing resistance to this idea, as well as on a potentially interesting corollary to the analysis of $\rho\acute{\iota}\zeta\alpha$ (and, for that matter, $\rho\acute{\iota}\mu\phi\alpha$) just proposed.

3.1. For this purpose, it is convenient to refer to A. Sihler's admirably explicit remarks,²² in his recent handbook of Greek, Latin and Indo-European comparative grammar:

(i) [Sihler 1995: 128f., §124] "One serious reproach, which has never been squarely faced by proponents of reduced grades, is that once one starts subdividing the distinction between PRESENCE and ABSENCE (in other words, full vs. zero grade), it is in principle possible to insert as many intermediate degrees as one wishes. That is, the number and kind of such intermediate vowels is open-ended and unconstrained, which is a serious demerit from the standpoint of methodology and theory. A different and possibly even graver objection is that no generalization can be made in regard to their distribution, in terms of either phonology or morphology. In this regard the theory is unlike ablaut."

(ii) [Sihler 1995: 527, §473b, with reference to $-v\bar{\alpha}/-v\check{\alpha}$ -presents, and specifically forms of the type $\pi\acute{\iota}\tau\eta\eta\mu\iota$, $\sigma\kappa\acute{\iota}\delta\eta\alpha\mu\alpha\iota$] "The $-i-$ that seems to take the place of normal $-e-$ in many of these roots ... has no satisfactory explanation. ... Since n -infix formations take the zero grade of the root, the original forms of these roots would have been $*skd-ne-H_2-$, $*pt-ne-H_2-$, and the like and some scholars have proposed a reduced grade (*schwa secundum*) in such stems. Such clusters might be the ideal spot to find syllabics which are intermediate between a full vowel and no vowel at all; but apart from the usual objections to that concept (124) roots of the shape $*skedH_2-$ and $*petH_2-$ would not be typical shapes for n -infix stems in PIE (though there are some similar ones, 453): most n -infix stems are made to roots with a potentially syllabic consonant before the infix. And such an explanatory strategy actually creates problems for $\kappa\acute{\iota}\rho\eta\eta\mu\iota$ and $\pi\acute{\iota}\lambda\eta\alpha\mu\alpha\iota$, because there is no reason for a reduced vowel in a shape like $*k_r-ne-H_2-$."

(iii) [Sihler 1995: 111, §112a] "'Reduced grades' ... merely restate the raw facts, and therefore lack any predictive or explanatory power."

²² In contrast, e.g. Beekes (1995: 194): "The existence of a separate reduced grade ... has been generally abandoned", without further comment. I find no mention at all of such matters in Szemerényi 1996, apart from a reference (1996: 272n7) to Szemerényi 1986 = 1991/1992: III.1524ff. (on Gk. $\kappa\acute{\iota}\rho\eta\eta\mu\iota$).

3.2. Ad 3.1.(i): These objections would be cogent if applied to wholly unconstrained versions of reduced-grade theory, or versions (like that of Güntert 1916) in which a relatively large number of schwa-secundum environments are posited more or less ad hoc²³; such objections cannot, however, be cogently applied to the explicit reduced-grade theory adduced above in connection with $\rho\acute{\iota}\zeta\alpha$. Here, there is no "subdivision" of the traditional distinction between PRESENCE and ABSENCE of a vowel (or full grade vs. zero grade), and consequently no danger of extending such a notion improperly to any number of unspecified "intermediate degrees": the so-called "reduced grade" is simply taken to result, in a phonologically regular way, from a (traditional) zero grade. This last point implicitly addresses, as well, the "even graver objection", namely that "no generalization can be made in regard to their distribution, in terms of either phonology or morphology": the reduced-grade vocalism appearing in Greek as /i/ (in forms like $\pi\acute{\iota}\tau\eta\eta\mu\iota$, $\pi\acute{\iota}\sigma\upsilon\pi\epsilon\varsigma$, and, according to the present account, $\rho\acute{\iota}\zeta\alpha$) arises via a rule of epenthesis which is statable in purely phonological terms (2.3., with the references in note 10 and the relaxed consonantal conditioning suggested in 2.4.1.), and which comes into play under precise morphological circumstances, i.e. zero grade forms which meet the structural description of the phonological rule in question. It should be clear, then, that the term "reduced grade" is essentially a misnomer: Sihler is perfectly correct in observing that such vowels fall outside the regular system of ablaut, being merely substitutes for zero grades. Likewise, use of the term "schwa secundum" to refer to such vowels can be justified only as a traditional (and still convenient) short-hand designation, similar to terms like "long diphthong roots", where (as a result of laryngeal theory) the phonological referent is no longer strictly accurate.²⁴

²³ Thus for Güntert (1916: 23), $\rho\acute{\iota}\zeta\alpha$ belongs with a series of words allegedly showing a development of his "schwa secundum" (reduced-grade vowel) to /i/ when /i/ or /j/ appears in the following syllable, among various other developments of "schwa secundum" posited for still other environments in Greek and elsewhere.

²⁴ Likewise Mayrhofer (1986: 176): "Der Terminus 'Schwa secundum' darf hier nur als wissenschaftsgeschichtlich bedingter Ausdruck für das vokalische Allophon der Nullstufe verstanden werden."

3.3. Ad 3.1.(ii): Again, the present conception does not operate with “syllabics which are intermediate between a full vowel and no vowel at all”. Whatever its schwa-like properties may originally have been, the epenthetic vowel arising from the cluster environment in question has in Greek become sufficiently similar to /i/ from other sources to be identified with this phoneme in the earliest form of Greek we can reach. (Cf. the <i> resulting from Latin medial vowel reductions.) Sihler’s second point, consisting of a series of related observations, is more important. It is quite true, of course, that “roots of the shape **skēdH₂-* and **petH₂-* would not be typical shapes for *n*-infix stems in PIE” and that “most *n*-infix stems are made to roots with a potentially syllabic consonant before the infix”. Moreover, Sihler’s cross-reference (to 1995: 498, §453) points out that the nasal infix presents apparently built to roots like **ghrebhH-* ‘seize’ and **meth₂-* ‘stir vigorously’ “may well be secondary imitations of routine *n*-infix stems to disyllabic roots” like **demh₂-* ‘tame’. There are, nevertheless, two counter-objections to be made here (quite apart from certain problems related to **meth₂-*²⁵). First, even if some ordinary ninth-class nasal present forms of the type *gṛhnāti* to *GRABH¹* or *ámathnāt* to *MATH¹* (to which could be added e.g. RV *amuṣṇāt* to *MOṢ/MOṢ¹* ‘steal’, *astabhñāt* to *STAMBH¹* ‘prop up’, *ásrathnan* to *SRATH¹* ‘slacken’, *aśnāti* to *AŚ¹* ‘eat’) are Indic innovations, this is rather less clear for the residual zero-grade nasal type in *-āyá-* (thus *gṛbhāyá-*, *mathāyá-*, *muṣāyá-*, *stabhāyá-*, *śrathāyá-*, among others), as discussed in detail by Jasanoff (1983).²⁶ Second, one must in any case

²⁵ For **meth₂-* ‘stir vigorously’, Sihler cites 3sg.impf. Ved. *ámathnāt*; but this form (RV 1.93.6b) belongs with *MATH¹* ‘snatch away’, probably to be separated from *MANTH¹* ‘stir vigorously’ (see Mayrhofer 1993: II.298, 312).

²⁶ The details of Jasanoff’s analysis, to be sure, are partly based on concerns similar to those of Sihler about the relative rarity of roots of the structure *T(R)E(R)TH-*; D. Ringe, however, has discussed the exaggerated nature of these concerns (1991: 94f.), citing the equation RV 3sg.inj. *stámbhit* : Proto-Toch. **ścama* (B *śama*, *ścmā-c/A śām*; on this equation also Ringe 1996: 35, 115, 151 and Hackstein 1995: 238, 319), and noting further (in connection with anīṭ forms like Ved. ptcple. *stabdhá-*) that “the final laryngeal of such roots could have become lost by various analogical processes and hence could become unreconstructable”. For extensive discussion of such “Aniṭisierung” processes in Tocharian, see now Hackstein 1995.

account not only for Gk. *πίτνημι* and *σίδναμαι*, but also for the apparently cognate nasal present formations in Lat. *pandō* 'spread out', O. *patensíns* 'aperirent' (beside *πίτνημι*), however the differences between the Latin and Oscan forms are to be explained,²⁷ and Toch. B *katnaŋi*, A *knāš* 'strew' (beside *σίδναμαι*).²⁸ Note specifically that no claim need be made as to the IE status of a "reduced vowel" resulting from zero-grade sequences like **pt-néh₂-* or **skd-nh₂-* (although this is theoretically possible, and has generally been assumed by proponents of schwa-secundum theory²⁹); one need only assume that (a) Greek, Latin and Tocharian inherited such zero-grade sequences, and that (b) Greek, for its part, shows reflexes of the type /pitnā-/ and /skidna-/ that can be interpreted in terms of a regular epenthesis. That this epenthesis may in fact be later than the IE period is suggested by *πίτνα* (if the above analysis is correct), since here the requisite phonological environment is only conceivable in Proto-Greek (and not IE) terms. This may suggest, indeed, that "schwa secundum" forms of the type *πίτνημι*, *σίδναμαι* etc. (as well as Lat. *pandō*, O. *patensíns* and Toch. B *katnaŋi*/A *knāš*; in addition, also *πίστυρες* : Lat. *quadru-*, etc., not to mention isolated forms of the type *ἰδρύω* [2.3.], *ρίμφα* [2.4.1.(i)]) are best conceived of as having resulted from einzelsprachlich responses to inherited zero grades still intact in the pre-Greek (pre-Lat., pre-Toch., etc.) periods.³⁰

²⁷ For recent discussion, see Schrijver 1991: 498-504, Rix 1995: 405, Meiser 1998: 122, LIV 430-1.

²⁸ On the Tocharian forms see recently Pinault 1989: 143; Hackstein 1995: 309; Ringe 1996: 35, 65, 147, Hamp 1998: 336 (following Hilmarsson 1996: 108f.), LIV 497-8.

²⁹ Explicitly e.g. Kortlandt 1987: 222, similarly (for the Ci- of IE pres. reduplicating syllables) Ruijgh 1995: 350-1.

³⁰ The "einzelsprachlich" conception of *πίτνημι*, *σίδναμαι* goes back to Ehrlich 1910: 19 (Güntert explicitly contra, 1916: 29f.). There is no space here to explore the question of the regular results of this epenthetic treatment in other languages (thus apparently /a/ in Latin, as possibly in *pandō*, *quadru-*, and a series of other forms interpretable in this way, as already noted — in addition to the forms in 2.4.1.(ii), also e.g. *canis* 'dog' < oblique forms of the type gen.sg. /kwšnés/; different accounts for all such items in Schrijver 1991). For a recent survey of the Balto-Slavic evidence see Birnbaum 1995, and for discussion of possibilities for a reduced vowel /i/ in Hittite, see Ivanov 1997: 161.

As for the idea that “such an explanatory strategy actually creates problems for κίρνημι and πίλναμαι, because there is no reason for a reduced vowel in a shape like $*k_{\gamma}ne-H_2-$ ”: the theory of a “reduced vowel” (or rather an epenthetic vowel) that surfaces in specified phonological environments like $*pt-néh_2-$ or $*skd-nh_2-$ would clearly take forms like κίρνημι and πίλναμαι to be analogical,³¹ which poses no serious problems (thus κίρνημι/κεράννυμι beside σκίδναμαι/σκεδάnnυμι, πίτνημι/πετάννυμι; πίλναμαι/ἐπέλασσα beside σκίδναμαι/ἐσκεδάσσα, πίτνημι/ἐπέτασσα).³²

3.4. Ad 3.1.(iii): Reduced grades would “merely restate the raw facts” and “lack any predictive or explanatory power” only in the absence of explicit claims about the phonological and morphological environments in which the vowels in question are said to occur. This is not, however, the case, as I have tried to make clear above. If the analysis proposed for ῥίζα is accepted, or even deemed worthy of further discussion, this would serve to demonstrate the predictive/explanatory power of this version of the theory: in effect, what may be a plausible explanation of ῥίζα has been arrived at merely by interpreting the form according to a set of phonological and morphological predictions postulated by Schindler, Peters and others on the basis of forms like πίτνημι, σκίδναμαι etc. (with the interesting difference, as just discussed in 3.3., that ῥίζα may make explicit the post-IE nature of the phenomenon in question, at least for some forms).

4. Gk. ἰνός ‘oven’

4.0. The predictive/explanatory power of the theory would be further enhanced if other recalcitrant forms yielded to similar analyses, or at least produced plausible or “diskutabel” alternatives to existing difficult or improbable accounts. While most such work must be left for the future, we may conclude by briefly discussing a possible example of this kind.

4.1. Especially before the decipherment of Mycenaean (but even to some extent afterward), Gk. ἰνός ‘oven’ has been routinely compared with

³¹ Thus explicitly Ehrlich 1910: 19; more recently Hardarson 1993: 182n119, Ruijgh 1995: 351n23.

³² Similarly (as seen already by Ehrlich) κρίννημι [Pi., Aesch.+] ‘hang’ beside ἐκρέμασσα [Hom.+], Att. κρεμάννυμι.

one or more of a series of words with similar meaning, principally Go. *auhns* 'id.' (among other Gmc. material with velar, vs. OE *ofen* 'id.' and other forms with labial), Lat. *aulla* 'pot' (dimin. *auxilla*), Ved. *ukhā-* [RV+]/*ukhā-* [AV+] 'cook-pot', traditionally traced (e.g. IEW 88, Watkins 1985: 4) to a root **aukw-* 'cooking pot'. Even before Myc. *i-po-no* '(cooking) bowls, dutch ovens' roiled these waters,³³ all was not clear with *ἰνός* in formal terms (even if the semantic development of the term within Greek can be satisfactorily traced, on which see now Chadwick 1996: 161ff.): among other problems, it was necessary to operate with one or another irregular treatment of a zero-grade **ukw-nó-* (itself not ideal for a root with *a*-vocalism), such as a dissimilation of **u-* to **i-* conditioned by the following labiovelar, or else a Güntertian schwa-secundum formulation in terms of a **w,kw-nó-* (Güntert 1916: 25, among forms allegedly displaying a development "*ə* [*ə* = "schwa secundum" — add. BV] zu gr. *ι* bei benachbartem *u*, *υ*", cf. n. 21 above). The vowel-dissimilation account founders on the likelihood that in sequences of this sort, the labiovelar would already have lost its labial element in IE times, as recently discussed by M. Weiss (1993: 153ff. = 1994: 137ff.). Weiss himself notes (1993: 155n18 = 1994: 138n18) that it might be tempting to try to explain the "strange case" of Go. *auhns* and Gk. *ἰνός* by this rule; nevertheless, as he observes, Myc. *i-po-no* is generally (and with a high degree of probability) assumed to be the equivalent of first-millennium *ἰνός*,³⁴ in which case "*ἰνός* would seem not to have a labiovelar at all, and the whole family remains difficult to account for under any theory".³⁵ C. Watkins (1982: 258n21 = 1994: 1.283n21) raised the possibility that Hitt. *hūppar* 'bowl' derives from a **h₂óμpr*, "which could well belong with the difficult family of Eng. *oven*, Ger. *Ofen*, Lat. *aulla*, Skt. *ukhāḥ*, Gk. *ἰνός* (Myc. *ipono*)". But this comparison, as interesting as it may be for the Gmc. material represented by Eng. *oven* and Ger. *Ofen*, does not in any way lessen the difficulties posed by the Greek form, which is quite incompatible with Hitt. *hūppar*. It is hardly surprising, under

³³ Among post-Aura Jorro material on *i-po-no*, see esp. Anderson 1994/5: 300f., 315f.

³⁴ See Aura Jorro 1985: 283

³⁵ I share Weiss' judgment that Szemerényi's "multiple dissimilation and borrowing account" of *ἰνός* (1960: 25f. = 1991/1992: IV.2236f.) fails to convince.

the circumstances, that Lehmann³⁶ resorts to a hypothesis operating with contamination at the IE level ("Possibly ... two competing words, influencing each other").

4.2. There is, however, yet another problem connected with Gk. ἰνός, well known on the Greek side but generally neglected otherwise, namely evidence in favor of initial aspiration (thus e.g. Frisk "ἰνός, viell. aus *ἰνός", I: 732 s.v. ἰνός). Even if some of the traditional evidence pointing in this direction now appears suspect,³⁷ the Old Attic inscriptional spelling with <H-> at IG I² 4.15 (ἡπνε[ύεσθαι], in a decree of 485/4), verified by Threatte from autopsy (see Threatte 1980: 503), is exceedingly difficult to explain away. The form, as Threatte makes clear, is thus comparable, in terms of chronology and attestation pattern, to Att. αὔριον 'next morning' (earlier also ἡαύριον), where the initial aspiration in ἡαύριον is clearly "etymological", so to speak (in this case by way of "aspirate anticipation", see e.g. Lejeune 1972: 95f., 121), but has been lost in standard Attic.³⁸ Note, in this connection, Chantraine's pointed remark (DELG s.v. ἰνός) that by comparing forms like Eng. *oven*, "l'aspirée parfois attestée en grec n'est pas expliquée". If, indeed, this feature is taken seriously, it may serve to separate ἰνός from such comparanda altogether, requiring a pre-form **hipnós* (in Proto-Greek terms), in principle still reflected in Myc. *i-po-no*.

The Pr.-Gk. **h-* of **hipnó-* could in theory derive from IE **i-* (or **H_i-*, depending on one's views concerning the Greek "double **i-* reflex" problem) or IE **s-*. But while neither *(*H*)*iipnó-* nor **sipnó-* is immediately promising,³⁹ plausible etymological sense could be made of a **spnó-* syllabified as

³⁶ In Lehmann-Feist 1986: 49, s.v. **auhns*, with many further references.

³⁷ Esp. *Ἐφίπνος· Ζεὺς ἐν Χίῳ Hsch. (cited by Frisk); see Latte 1966: 246 ad loc. ("vix sanum").

³⁸ On the probable post-Mycenaean age of Greek aspirate-anticipation, see now Nussbaum 1998: 138 with n. 136. This does not, of course, diminish the value of a form like ἡαύριον for the interpretation of the *h-* of ἡπνε[ύεσθαι] as a potentially old feature.

³⁹ For the latter, Michael Weiss (p.c., March 1999) reminds me of the **seip-* 'ausgießen etc.' of IEW 894 (cf. *i-po-no* 'boiler'), but this material is only marginally attested (essentially Germanic only) as a variant of **seib-* (LIV 472), and is not at bottom semantically comparable in any case (mainly 'sieve/sift, seep, drip' etc.).

/s\$pnó-/ , which then undergoes the phonological treatment with i-epenthesis as in πίννῃ etc. (2.3.): the root would be the *sep- of ἔψω 'boil' (the latter with enlarged stem *sep-s-), this verb providing the parallel full grade that would help account for the maintenance of a syllabification /sVp-/ in an original zero-grade *sp-nó- 'boiler' > '(cooking) bowl'/'oven' (in addition to the constraint against /spn-/ , a non-occurring initial cluster in Greek).⁴⁰ Given what was said above concerning possible implications of ῥίζα (3.3.), the same account could be applied, mutatis mutandis, at the Pr.-Gk. level, with a /h\$pnó-/ (beside /hépse-/ 'boil') adjusted to /hipnó-/ via the rule in question (cf. the same phonetic environment in ἰδρώ, 2.3.). As a formation based directly on the unenlarged root, and clearly predating later e-grade remodelings of the type σεμνός 'holy' (: σέβομαι 'worship'), τερπνός 'pleasing; pleased' (: τέρπομαι 'be delighted'), etc. (Chantraine 1933: 193), such a *sp-nó- would be a relatively old form. It should be noted, however, that unenlarged *sep- 'boil' (or 'cook') might have been disfavored in Greek, in view of homonymic conflict with *sep- 'handle' (including food preparation, see my remarks in 1988: 55f.), whence perhaps replacement with enlarged *sep-s- at some point after the formation of *sp-nó- (/s\$pnó-/) or *hp-nó- (/h\$pnó-/). As for the actively-valued verbal adjective (thus here 'boiling' > substantivized 'boiler', not **'boiled' > **'stew', vel sim.): *-nó-, like *-tó-, was originally voice-indifferent, and actively-valued behavior for *-nó- is otherwise attested for Greek — cf. τερπνός above, and note esp. θαλπνός 'warming' [Pi. O. 1.6] (: θάλλω 'warm, heat' [Od.+]), in the same semantic field as ἰπνός.⁴¹

⁴⁰ For the pattern *sep-s-e/o- : *sp-nó-, cf. *h₂lék-s-e/o- (ἀλέξω 'ward off') : *h₂l_k-éh₂ (ἀλκή 'bulwark'). For present purposes, it is not necessary to enter into the controversy surrounding the medial consonant of Arm. ep'em 'cook', for which *-ps- is in any case a possible source (see recently Clackson 1994: 172f., Kortlandt 1994: 30, Elbourne 1998: 14f.).

⁴¹ As an alternative to the above, one may wish to consider the comparison of Eng. oven etc. and Gk. ἰπνός with Hitt. happina (direct.) 'into the fire' (Ivanov 1979); according to this conception of the root (i.e. *h₂/h₃ep-), it seems possible that a zero-grade *h₂/h₃p-nó- might have ended up as /ipnó-/ in Greek (see now Ruijgh 1995: 355 for similar claims about Gk. /íkwo-/ 'horse' [with post-Mycenaean initial aspiration] < *h₁k_ud-), but in that case the initial aspiration in Gk. ἡπνε[ύεσθαι] would be difficult to account for.

To be sure, the above account of ἰνός leaves more than one question unanswered. It remains unclear, for example, what led to the (relatively late) loss of initial aspiration, a process about which one can only speculate.⁴² The possible connection with *sep-(s-) 'boil', nevertheless, has an obvious semantic appeal, and the (morpho)phonological framework developed above goes some distance toward rendering the formal side of the comparison at least worth discussing. Like the analysis of ῥίμφα suggested above (2.4.1.), the connection itself owes its existence to the "predictive power" of the particular version of "schwa secundum" theory (or better "Greek i-epenthesis theory") applied above to ῥίζα. There is at least the possibility that — to use a well-known phrase — further examples may await us in the texts.^{43 44}

⁴² Here one may consider the possible influence of structurally similar words for 'ash, ashes' and the like, as in Cyren. ἰνυς (SEG 9.72.28 = Buck 1955: 307, §6), cf. ἰνυον· κονίαν· σμήμα and ἰνία· τὰ καθάρματα τοῦ ἰνοῦ (both Hsch.).

⁴³ One such possibility was pointed out to me by Michael Weiss (p.c., April 1999): if λικερίζειν· πηδῶν Hsch. is Aeolic, it could go back to a *λικριτ(o)-, i.e. a *l_ek-ri-(to-) with "schwa-secundum" treatment /likri-/, based on the verbal root *lek- 'move the limbs' (LIV 369); Lat. *lacertus* '(muscles of the) upper arm', moreover, could derive from precisely the same form, with expected *a*-vocalism (cf. 2.4.1.(ii) above).

⁴⁴ It is a pleasant duty to express my sincere gratitude to Andrew Sihler (of the University of Wisconsin, Madison), who graciously read a draft of this paper and provided a number of detailed and thoughtful comments and criticisms. It hardly needs to be added that Sihler does not necessarily approve of either the substance or the details of the above analyses; if I have persisted in offering them, in some cases no doubt at my peril and against his better judgment, the responsibility for any infelicities of fact and argumentation rests with me alone. I am also grateful to Joshua Katz (of Princeton University), Brian Joseph (of the Ohio State University) and Kim McCone (of St. Patrick's College, Maynooth) for their helpful comments on earlier drafts, and to audiences of the UCLA Indo-European Studies "Round Table" meeting of October 24, 1997 (especially Martin Huld, Vyacheslav Ivanov, and Jay Friedman) and the Berkeley Workshop on Greek Language and Linguistics held on March 13, 1999 (especially Andrew Garrett and Michael Weiss).

References

- Anderson, Deborah, 1994/5. Mycenaean vessel terms: Evaluating the IE evidence. *Minos* n.s. 29-30.295-322.
- Aura Jorro, Francisco, 1993. *Diccionario Micénico*, vol. 2. Madrid: Consejo Superior de Investigaciones Científicas.
- Beekes, Robert S. P., 1995. *Comparative Indo-European Linguistics: An Introduction*. Amsterdam/Philadelphia: John Benjamins.
- Birnbaum, Henrik, 1995. Reduced and zero grade in Indo-European, with special consideration of Baltic and Slavic. *Linguistica Baltica* 4.13-22.
- Bowie, Angus M., 1981. *The Poetic Dialect of Sappho and Alcaeus*. New York: Arno Press.
- Buck, Carl Darling, 1955. *The Greek Dialects*. Chicago/London: University of Chicago Press.
- Chadwick, John, 1996. *Lexicographica Graeca: contributions to the lexicography of Ancient Greek*. Oxford: Oxford University Press (Clarendon).
- Chantraine, Pierre, 1933. *La formation des noms en grec ancien*. Paris: Klincksieck.
- Chantraine DELG: P. C., *Dictionnaire étymologique de la langue grecque: Histoire des mots*. Paris, 1968-1980: Klincksieck.
- Clackson, James, 1994. *The Linguistic Relationship Between Armenian and Greek*. Oxford/Cambridge (MA): Blackwell.
- Eichner, Heiner, 1985. Das Problem des Ansatzes eines urindogermanischen Numerus 'Kollektiv' ('Komprehensiv'). *Grammatische Kategorien: Funktion und Geschichte* (ed. B. Schlerath), 134-169. Wiesbaden: Ludwig Reichert.
- Ehrlich, Hugo, 1910. *Zur indogermanischen Sprachgeschichte*. Progr. Königsberg: Königsberg I. Pr.
- Elbourne, Paul, 1998. Proto-Indo-European voiceless aspirates. *HS* 111.1-30.
- Frisk GEW: H. F., *Griechisches etymologisches Wörterbuch*. Heidelberg, 1960-1972: Carl Winter.

- Griepentrog, Wolfgang, 1995. Die Wurzelnomina des Germanischen und ihre Vorgeschichte. Innsbruck: IBS 82.
- Güntert, Hermann, 1916. Indogermanische Ablautprobleme: Untersuchungen über Schwa secundum, einen zweiten indogermanischen Murrelvokal. Straßburg: Trübner.
- , 1995. Untersuchungen zu den sigmatischen Präsensstambbildungen des Tocharischen (HS Erg. 38). Göttingen: Vandenhoeck & Ruprecht.
- Hackstein, Olav, 1992. Eine weitere griechisch-tocharische Gleichung: Griechisch πῑξαι und tocharisch B *pyäksi*. Glotta 70.136-165.
- , 1995. Untersuchungen zu den sigmatischen Präsensstambbildungen des Tocharischen. Göttingen: Vandenhoeck & Ruprecht (HS Erg. 38).
- Hamp, Eric P., 1998. Whose were the Tocharians? Linguistic subgrouping and diagnostic idiosyncrasy. The Bronze Age and Early Iron Age Peoples of Eastern Central Asia, vol. 1 (ed. V. Mair), 307-346. Washington, D.C.: Institute for the Study of Man (JIES Monograph 26).
- Hardarson, Jón Axel, 1993. Studien zum urindogermanischen Wurzelaoarist und dessen Vertretung im Indoiranischen und Griechischen. Innsbruck: IBS 74.
- Hilmarsson, Jörundur, 1996. Materials for a Tocharian Historical and Etymological Dictionary. Reykjavík: TIES Supplement vol. 5.
- Huld, Martin, 1978/9. Albanian *i thellë* and its eastern relations. KZ 92.297-299.
- , 1983. Basic Albanian Etymologies. Columbus, OH: Slavica.
- , 1997. Magic, metathesis, and nudity in Indo-European thought. Studies in Honor of Jaan Puhvel, Pt. 1: Ancient Languages and Philology (ed. D. Disterheft, M. Huld and J. Greppin), 75-92. Washington, D.C.: Institute for the Study of Man (JIES Monograph 20).
- IEW: J. Pokorny, Indogermanisches etymologisches Wörterbuch, Bd. 1. Tübingen/Basel, 1959: [repr.] Francke.
- Isebaert, L., 1991. Quelques considérations sur les emprunts iraniens en tokharien: le traitement des diphtongues. Studia Etymologica Indoeuropaea Memoriae A. J. Van Windekens (1915-1989) Dicata (ed. L. Isebaert), 141-150. Leuven: Peeters.

- Ivanov, Vjač. Vs., 1979. Razyskanija v oblasti anatolijskogo jazykoznanija, 10. Xett. *ḫappina* 'plamja očaga' : dr. -isl. *ofn* 'očag'. Ètimologija 1977.145.
- , 1997. Luwian collective and non-collective neutral nouns in *-ar*. Indo-European, Nostratic, and Beyond: Festschrift for Vitalij V. Shevoroshkin (ed. I. Hegedűs, P. Michalove and A. Manaster Ramer), 155-167. Washington, D.C.: Institute for the Study of Man (JIES Monograph 22).
- Jasanoff, Jay H., 1983. The IE. "*ā*-preterite" and related forms. IF 88.54-83.
- , 1994. Aspects of the internal history of the PIE verbal system. Früh-, Mittel-, Spätindogermanisch (ed. G. E. Dunkel et al.), 149-168. Wiesbaden: Ludwig Reichert.
- Joseph, Lionel Saint, 1980. Problems in the Development of the Indo-European Laryngeals in Celtic. Ph.D. dissertation, Harvard University.
- , 1982. The treatment of **CRH-* and the origin of *CaRa-* in Celtic. Ériu 33.31-57.
- Kimball, Sara E., 1988. Analogy, secondary ablaut and **OH₂* in Common Greek. Die Laryngaltheorie und die Rekonstruktion des indogermanischen Laut- und Formensystems (ed. A. Bammesberger), 241-256. Heidelberg: Carl Winter.
- Kortlandt, Frederik, 1987. Archaic ablaut patterns in the Vedic verb. Festschrift for Henry Hoenigswald on the Occasion of his Seventieth Birthday (ed. G. Cardona and N. Zide), 219-223. Tübingen: Gunter Narr.
- , 1994. Palatalization of dentals in Armenian. AAL 15.27-31.
- Kuryłowicz, Jerzy, 1958. L'accentuation des langues indo-européennes. Wrocław/Kraków: Wydawnictwo Polskiej Akademii Nauk.
- , 1968. Indogermanische Grammatik, Bd. II: Akzent/Ablaut. Heidelberg: Winter.
- Latte, Kurt, 1966. Hesychii Alexandrini Lexicon, vol. 2 (E-O). Copenhagen: Munksgaard.
- Lehmann-Feist: W. P. Lehmann, A Gothic Etymological Dictionary. Leiden, 1986: Brill.
- Lindeman, Fredrik Otto, 1990. Greek ὄρνις. Glotta 68.168-170.

- , 1996. *Studies in Comparative Indo-European Linguistics: presented on the occasion of his sixtieth birthday March 3, 1996* (ed. Helge Lødrup and Inger Moen). Oslo: Novus.
- LIV: *Lexikon der indogermanischen Verben*, ed. H. Rix et al. Wiesbaden, 1998: Ludwig Reichert.
- Mayrhofer, Manfred, 1986. *Indogermanische Grammatik, Band I/2: Lautlehre (Segmentale Phonologie des Indogermanischen)*. Heidelberg: Carl Winter.
- , 1993, 1994. *Etymologisches Wörterbuch des Altindoarischen*, 1986-. Heidelberg: Carl Winter.
- McCone, Kim, 1991. *The Indo-European Origins of the Old Irish Nasal Presents, Subjunctives and Futures*. Innsbruck: IBS 66.
- Meier-Brügger, Michael, 1990. Zu griechisch *καλλός*. HS 103.30-32.
- Meiser, Gerhard, 1998. *Historische Laut- und Formenlehre des Lateinischen*. Darmstadt: Wissenschaftliche Buchgesellschaft.
- Melchert, H. Craig, 1993. *Cuneiform Luvian Lexicon*. Chapel Hill, NC: Department of Linguistics.
- , 1994. The feminine gender in Anatolian. G. Dunkel et al. (eds.; see Jasanoff 1994 above), 231-244.
- Neu, Erich, 1996. *Das hurritische Epos der Freilassung, I (Untersuchungen zu einem hurritisch-hethitischen Textensemble aus Hattusa)*. Mainz: Akademie der Wissenschaften und der Literatur (StBoT 32).
- Nussbaum, Alan J. 1986. *Head and Horn in Indo-European*. Berlin/New York: de Gruyter.
- , 1998. *Two Studies in Greek and Homeric Linguistics*. Göttingen: Vandenhoeck & Ruprecht (Hypomnemata 120).
- Oettinger, Norbert, 1979. *Die Stammbildung des hethitischen Verbums*. Nürnberg: Hans Carl.
- , 1993[1994]. Der Akzent des indogermanischen Kollektivums im Lichte des Hethitischen. MSS 54.207-214.
- Peters, Martin, 1980. *Untersuchungen zur Vertretung der indogermansichen Laryngale im Griechischen*. Vienna: SbÖAW 377.
- Pinault, Georges-Jean, 1979. Grec *ἀγαθός*. MSS 38.165-170.

- , 1989. Introduction au tokharien. Paris: Presses de l'École normale supérieure [= LALIES 7.6-224].
- Pisani, Vittore. 1966. Armenische Miszellen. *Sprache* 12.227-236.
- Ringe, Donald A., Jr., 1991[1988-1990]. Evidence for the position of Tocharian in the Indo-European family? *Sprache* 34.59-123.
- , 1996. On the Chronology of Sound Changes in Tocharian, vol. 1: From Proto-Indo-European to Proto-Tocharian. New Haven: American Oriental Society (AOS, v. 80).
- Rix, Helmut, 1976. Historische Grammatik des Griechischen. Darmstadt: Wissenschaftliche Buchgesellschaft.
- , 1995. Einige lateinische Präsensstambildungen zu Set-Wurzeln. *Kuryłowicz Memorial Volume, Part One* (ed. W. Smoczyński), 399-408. Cracow: Universitas.
- , 1996. review of Schrijver 1991. *Kratylos* 41.153-163.
- Ruijgh, C. J., 1980. Le problème du degré zéro dans les adverbes du type *κάρα* et dans d'autres types morphologiques. *Recherches de linguistique: Hommages à Maurice Leroy*, 189-198. Bruxelles: Éditions de l'Université de Bruxelles.
- , 1995. Observations sur les voyelles d'appui en proto-indo-européen et en grec ancien. W. Smoczyński (ed.; see Rix 1995 above), 345-356.
- Schindler, Jochem, 1972. Das Wurzelnomen im Arischen und Griechischen. Würzburg dissertation.
- , 1977. A thorny problem. *Sprache* 23.25-35.
- Schrijver, Peter, 1991. The Reflexes of the Proto-Indo-European Laryngeals in Latin. Amsterdam/Atlanta: Rodopi.
- , 1995. Studies in British Celtic Historical Phonology. Amsterdam/Atlanta: Rodopi.
- Schwyzler, Eduard, 1939. Griechische Grammatik, Bd. 1 (Allgemeiner Teil, Lautlehre, Wortbildung, Flexion). Munich: C. H. Beck.
- Sihler, Andrew L., 1995. *New Comparative Grammar of Greek and Latin*. Oxford/New York: Oxford University Press.
- Szemerényi, Oswald J. L., 1960. Gothic *auhuma* and the so-called comparatives in *-uma*. *BGDSL-T* 82.1-30.

- , 1986. Greek σκιρτάω and the nasal-infix type κίρνημι. *Studies in Honour of T. B. L. Webster, I* (ed. J. H. Betts, J. T. Hooker and J. R. Green), 225-30. Bristol: Bristol Classical Press.
- , 1991/1992. *SCRIPTA MINORA: Selected Essays in Indo-European, Greek, and Latin*, ed. J. T. Hooker and P. Considine, 4 vols. Innsbruck: IBS 53, 63.
- , 1996. *Introduction to Indo-European Linguistics*. Oxford: Oxford University Press (Clarendon).
- Threatte, Leslie, 1980. *The Grammar of Attic Inscriptions*, vol. 1 (Phonology). Berlin/New York: de Gruyter.
- Tremblay, Xavier, 1996. Zum suffixalen Ablaut o/e in der athematischen Deklination des Indogermanischen. *Sprache* 38.31-70.
- Trubačev, O. N. (ed.), 1979. *Etymologičeskij slovar' slavjanskix jazykov*, vyp. 6 (*e—*golva). Moscow: Nauka.
- Vine, Brent, 1988. Greek ἔπω and Indo-European *sep-. *IF* 93.52-61.
- , 1999 [in press]. On "Cowgill's Law" in Greek. *Compositiones Indogermanicae in memoriam Jochem Schindler* (ed. H. Eichner and H. C. Luschützky). Prague.
- Wagner, Norbert, 1997. Ahd. *leffur* : *lefs* : ae. *lipa*. *HS* 110.161-165.
- Watkins, Calvert, 1982. Notes on the plural formations of the Hittite neuters. *Investigationes Philologicae et Comparativae: Gedenkschrift H. Kronasser* (ed. E. Neu), 250-262. Wiesbaden: Otto Harrassowitz.
- , 1985. *The American Heritage Dictionary of Indo-European Roots*. Boston: Houghton Mifflin.
- , 1994. *Selected Writings* (ed. L. Oliver), 2 vols. Innsbruck: IBS 80.
- , 1997. Luvo-Hittite **lapan(a)*-. *Studies in Honor of Jaan Puhvel*, Pt. 1: *Ancient Languages and Philology* (ed. D. Disterheft, M. Huld and J. Greppin), 29-35. Washington, D.C.: Institute for the Study of Man (JIES Monograph 20).
- Weiss, Michael L., 1993. *Studies in Italic Nominal Morphology*. Ph.D. dissertation, Cornell University.
- , 1994[1995]. Life everlasting: Latin *iūgis* 'everflowing', Greek ὑγιής 'healthy', Gothic *ajukdūps* 'eternity' and Avestan *yauuaēji-* 'living forever'. *MSS* 55.131-156.

A Lexical Analysis of Simple *-r/n- Heteroclisis in Proto-Indo-European¹

Jay Friedman

§0.0. The Indo-European gender system, whether one believes IE nouns held a tertiary opposition of gender or a binary contrast of animacy, is a standard example of nominal classification. More specifically, the IE gender system is a simple noun class system. Systems of this type are generally defined by a formal division of nouns between two to four categories. Based on typological observations, the origins of simple noun class systems can be said to be of two types: the simplification of an older, more complex system of noun classes or an organic genesis through the grammaticalization of independent lexemes. The question arises: which is the origin of the IE gender system? Further, can we know?

Typological observations show that one way the history of a simple noun class system can reveal itself is through the presence or absence of morphological debris. Newly created systems tend to make use of several etymologically opaque lexemes. Conversely, simplified systems show the presence of bleached, reanalyzed, empty morphemes, whose origins have long been obscured by analogical or phonetic forces.²

¹This paper is part of a dissertation which examines whether it is possible to locate residual traces of earlier morphosyntactic structures within Proto-Indo-European by means of diachronic and synchronic typology.

²A descriptive analysis of this particular topic is the subject of another section from this dissertation. The following quote offers a general overview of the paper: "(on the diachronic tendencies of how daughter languages of Proto-Benue-Congo and Proto-Bantu, examples *par excellence* of complex noun class systems, simplify)...It is not just *any* genders which persist, but rather the human 1/2 and the non-human 9/10 classes which are the last to be lost. CV- prefixes are not simply omitted, but rather incorporated into the stem with new prefixes often added." (Demuth, Faracas, Marchese 1986:459). In essence, a noun class system in the process of simplification often generalizes two or three noun classes with the broadest semantic contrasts. Old noun class markers are subsumed into various lexical stems, and these newly minted lexical stems are remarked with one of the new, general noun class affixes. The parallel to be drawn for PIE is such: the stem formants of the IE nominal system may be old, non-productive noun class markers which have been bleached functionally and reanalyzed (*lexical root + *old class marker > *noun stem = lexical root + stem formant). The binary animate/inanimate contrast which has been reconstructed for the early stages of PIE may be the end result of a complex noun class system collapse, exactly of the

As both processes are well attested, there is no reason to assume one over the other for PIE on the basis of plausibility. On an observational level, the hypothesis of simplification offers a picture that coincides better with the reconstructed nominal system of PIE. The IE noun may be broken into some combination of lexeme, stem formant and desinence. The problem faced by Indo-Europeanists in understanding earlier stages of the IE noun is twofold: the stem formants which are reconstructed appear to have no identifiable morphological or lexical value, while the desinences are portmanteau, thereby obscuring exactly how or whether PIE marked both gender, number and case in its earliest stages. A simplification hypothesis offers a better explanation for both problems. Empty morphemes are not only expected but predicted. Portmanteau morphemes are more likely to occur within the context of reanalysis, bleaching and the possible repetition of these two processes, than in the simple grammaticalization of a productive lexeme.

Can traces of a simplified noun class system be found within PIE? Through the analysis of basic heteroclitic **-r/n-* formations it may be possible to see glimpses of this archaic, morphosyntactic system. If a more complex noun class system can be reconstructed for PIE, new insights into several areas of IE morphosyntax can be gained.

0.1. This study is devoted to determining whether any functional value can be reconstructed for the Indo-European stem formant **-r/n-*. What follows is a close analysis of the heteroclitic formation type **lexeme + *-r/n-*. Excluded from this analysis are any heteroclitic formations with morphemes of the type **-uer/n-*, **-ter/n-*, **-ser/n-* and so forth. Formations such as **root + *-h₁/n-*,³ **-l/n-*, etc..., are likewise excluded. Derived formations, composed of **verbal root + *-r/n-*, which type found across many of the daughter languages of Proto-Benue-Congo and Proto-Bantu. Empirical verification of such a hypothesis for PIE depends, partly, on the recovery of a lexical value for an IE nominal stem formant. Of all the IE stem formants, the simple **-r/n-* heteroclitic formant is generally held to be the most archaic. Any hope of catching a glimpse of an old, functional noun class is likeliest to be found here.

³Exemplified by the type found in **h₃est-h₁-* 'bone'. Cf. Sihler (1995:301-2).

produce deverbative nouns, are likewise excluded, as they are secondary. My reason for dividing the Indo-European heteroclititic formations as such is as follows: we cannot at this point prove that any of these morphological formations share a common heritage. Likewise, by restricting our analysis to a single morphological formation we stand a better chance of finding nuances within the formation, lexical or otherwise, which might otherwise be hidden by considering a vast array of potentially unrelated formations.

0.2. For ease of communication I have labeled the formation of $\text{*root} + \text{*r/n-}$ as simple *r/n- heteroclitisis. Those formations built with the well known suffixes *ser/n- , *mer/n- , and the like, are referred to as complex *r/n- heteroclititic formations. Forms of the type $\text{*h}_3\text{est-h}_1/\text{n-}$ and $\text{*sh}_2\text{u-él/n-}$ are referred to as $\text{*h}_1/\text{n-}$ or *l/n- heteroclititic formations.

0.3. Beyond the restrictions mentioned in 0.1, considerations of plausibility need to be employed. Émile Benveniste's *Origines de la formation des noms en indo-européen* has been the exemplar for most of the works which have delineated IE heteroclititic formations in one context or another since 1935.⁴ However, the criteria employed in these works have been far too inclusive. Distinct morphological categories, such as nouns or adjectives in *ro- and *no- , Greek verbal formations with the productive Greco-Armenian nasal suffix *an- and the like, have been lumped together with *r- stems and *n- stems under the assumption that all these formations are somehow ultimately related. Yet there is little proof for many of these assumptions. On the contrary, Ernst Risch (1974:13) points out: "Nicht sehr zahlreich sind...die Fälle, bei denen ein Wort, ohne den Sinn zu verändern, durch -o- erweitert wird."

⁴Compare the remarks of Rudolf Wachter (1997): "Benvenistes Methode hat einen grossen Einfluss ausgeübt, nicht nur in Frankreich – dort etwa auf P. Chantraine's *Dictionnaire étymologique de la langue grecque* (1968-80) –, sondern durchaus auch auf Werke zur Wortbildung aus dem deutschen Sprachraum."

This is not to say that the ideas put forth by Benveniste and those who have followed his methodological approach should be ignored. On the contrary, they should be scrutinized and reassessed under more stringent criteria.

0.4. Criteria employed in this study for delimiting plausibility:

0.4.1. A single lexical root which shows a host of different types of r-formations and n-formations, yet neither n-stems nor r-stems, must be excluded from consideration. While certain *-ro- stems and the like may ultimately reflect a thematized *-r- stem, there is, in most cases, little evidence to support such a transformation. On the contrary, *-n- stems and *-no- stems, as *-r- and *-ro- stems, were not isofunctional in PIE. They formed distinct morphological categories. It is fallacious to assume a common origin for the two stem formants.

0.4.2. A given root must show, at bare minimum, a dismembered paradigm across the Indo-European daughter languages. Such a paradigm is defined here as a single lexical root showing at least a simple *-r- stem formation in one daughter language and a *-no- stem formation in another, or an *-n- stem in one and a *-ro- stem in another.⁵ This sort of paradigm is exemplified by data sets of the type *su(ó)p-r̥, as in Greek ὕπαρ, and *suép-no-s, as in Latin *somnus* and others.⁶ Here, as opposed to lexemes of the type referred to in 0.4.1., it is not unreasonable to suspect thematization of an older *-n- stem or *-r- stem from an original heteroclitic paradigm. Schindler (1975:3-10) lists several forms of analogy which could yield thematization of an earlier *-r- or *-n- stem.

0.4.3. A lexical root which shows a simple *-r- formant in the nominative

⁵Naturally, the plausibility of a given reconstruction's heteroclitic status increases if at least one daughter language shows *-r- stem forms, while another has *-n- stem forms.

⁶Cf. 2.11.

and accusative singular, but no oblique forms at all, likewise merits consideration, as exemplified by Vedic *kápr̥th* (3x; R̥gveda only; no oblique cases attested).⁷ Most, if not all, of the IE daughter languages do not attest the productive use of simple *-r/n- heteroclitis. As such, rarely used oblique forms of non-productive heteroclitic formations would be highly susceptible to replacement via suppletion, as well as analogical extension of the *-r- stem formant. However, in the latter case, where the end result is a simple *-r- stem, it becomes impossible to distinguish genuine, old heteroclitic formations (without further evidence, of course) from simple *-r- stems. In the case where a given root shows no oblique forms, the loss of an archaic, non-productive heteroclitic formation may plausibly be surmised as a possibility.

0.4.4. Limiting this study on these bases will not eliminate all forms of analytical error. Some forms which were indeed once heteroclitic might be lost in such an analysis. Other forms which may have been post-PIE creations might be included. However, the alternative method, accepting any given lexical root with a remote possibility of once having been a simple *-r/n- heteroclitic noun in PIE, is inherently more prone to analytical error. Shying away from speculation as much as possible naturally reduces the potential for inaccurate analysis.

0.5. Employing some degree of probability within those forms deemed as having a 'plausible' chance of PIE status offers another form of control. Probability, unlike a binary 'yes/no' analysis, not only enables us to weight the value of a given form's importance within the study, but also keeps us from discarding liminal forms which may be of some value (forms which have some reasonable probability to merit inclusion, yet not enough to conclude their status as such with any certainty). Placing weight on the basis of probability can then yield two (or more) types of analysis: one based only on the most secure data and another based on all the data,

⁷cf. 4.01.

including marginal items. If the analysis based on high levels of certainty is supported by the wider data set, then the conclusions of the former analysis are further buoyed.

0.5.1. Determining the degree of probability of IE simple **-r/n-* heteroclitis within a given root must be handled on a case-by-case basis. In any given data set there may be different reasons to suppose or deny the reconstruction of an underlying heteroclitic formation for PIE. In some cases a wealth of information offers convincing proof. In other reconstructions any evidence at all may be extremely scarce. Yet in such cases the probability of heteroclitic inheritances may be no less. Often the best evidence for archaism is attested not by a slew of sturdy examples, but the survival of non-productive irregularities as relics in a remodeled morphological environment.

0.6. The data included in this survey are of two sorts: those forms which merit consideration and those forms which must demonstrably be rejected, so as to avoid the mistaken appearance that this list is selective in any way.⁸ A discussion of probability (within words with plausible simple **-r/n-* heteroclitic backgrounds) on a form-by-form basis follows. The formations are grouped roughly in order of probability, most to least. Forms within the first four groups may be heteroclitic inheritances from PIE, while the forms within the last four groups must be rejected in accordance with the standards established in § 0.

§1.0. Group 1 contains those formations with the highest probability of reflecting an underlying IE heteroclitic formation:

⁸This compilation of data was amassed, at least partially, from the following sources: Macdonell (1910), Petersson (1922), Benveniste (1935), Schwyzler (1939-50), Sturtevant (1951), Friedrich (1952-68), Egli (1954), Pokorny (1959), Meriggi (1962), Stang (1966), Carruba (1970), Risch (1974), Schindler (1975), Shields (1979), CHD (1981-97), Haudry (1982), Markey (1984), Starke (1990), Melchert (1993), LSJ (1996) and Hoffmann and Forssman (1996).

1.01. * $\check{i}ek_u-r/n-$, $i\acute{e}k_u-r/n-$ *"liver".⁹ Old Indic $yákr̥t$, $yaknás$,¹⁰ Avestan $yākarə$, Greek $\eta\pi\alpha\rho$, $\eta\pi\alpha\tau\omicron\varsigma < *i\acute{e}k_u-r$, $*i\acute{e}k_u-i-t-os$, Latin $iecur$, $iocineris$ (heteroclitic *-n- preserved in the oblique forms underneath the recent analogical extension of the *-r- stem formant), Latvian $aknas$ and Old Prussian $iagno$.¹¹ The heteroclitic nature of this word is directly attested in Indo-Iranian, Greek, and Italic, while an underlying heterocclisis can be assumed for the Baltic forms on the basis of the evidence in the three other IE branches. There is no reason to assume a late, dialectal innovation here, as the dialectal diffusion is sufficiently broad, being attested in both Indo-Iranian and Italic. The reconstructed semantic value of *"liver" is safely assured.

1.02. * $(h_1)\acute{e}sh_2-r/n-$ *"blood". Old Indic $ásrk$, $asnás$, Hittite $\acute{e}šhar$, $\acute{e}šhinas$, Cuneiform Luwian $\acute{a}šhar/n$ (*-n-), Palaic $\acute{e}šhur/n- < *(h_1)\acute{e}sh_2-or/n-$, Old Latin $aser/assy$, Latin $sanguen$, Greek $\acute{\epsilon}\alpha\rho$,¹² Armenian $ariwn$, and Tocharian A $ysār < *(h_1)\acute{e}sh_2-ōr$, an old collective, and Latvian $asīns$.¹³ Indo-Iranian, Northern Anatolian

⁹Lexical definitions are intentionally demarcated with an asterisk to emphasize that the lexical aspects of the form are just as much a reconstruction as are the phonetic ones. The exact semantic value of any reconstruction is of particular importance due to the nature of this study.

¹⁰The difficulties of the Vedic accent, the variation between lengthened grade and full grade ablaut, as well as the variation in ablaut quality (*-o- vocalism is shown in both the Italic and Baltic attestations) all present difficulties in understanding the exact nature of the ablaut and accent in the underlying IE declensional pattern, though this is likely of little concern for the topic at hand.

¹¹A connection between the -t- in the Vedic form and the -t- in the Greek form is quite possible, though of no importance for this analysis. Whether or not such extensions are archaic retentions or dialectal innovations is a difficult question. In the absence of an answer, their importance within this analysis must remain uncertain.

¹²The Homeric form $\acute{\iota}\chi\acute{\omega}\rho$ "blood of the gods" likely belongs here, though the form is of uncertain origin (perhaps an Anatolian borrowing).

¹³As with 1.01, we see variations with ablaut quantity and quality. Of interest is the possible reconstruction of a deeper underlying form * $(h_1)\acute{e}sh_2-r/n-gu-$, as may be attested by Vedic $ásrk$ - and Latin $sanguen$.

and Southern Anatolian show ample evidence for an underlying IE heteroclitic formation, while the other IE daughter languages support this conclusion, as Greek and Baltic attest a dismembered paradigm.¹⁴ This formation is well represented in all the IE subgroups, thereby assuring IE antiquity. The reconstruction of a meaning “blood” shows no difficulties.

1.03. *sók-r/n- “excrement”.¹⁵ Greek σκῶρ, σκατός, Hittite *šakkar*, *šaknaš*, Avestan *sairiia-* < *sḱe/or-jo-, Old Norse *skarn*, Latvian *sārni* and Russian *sor*. Greek and Northern Anatolian both attest heterocclisis, while an underlying heteroclitic formation for Germanic and Baltic can be assumed by the presence of the Greek and Hittite forms on the one hand, and the conflation of the stem-formants *-r- and *-n- > *-rn- on the other. The dialect distribution of this form is widespread. The exact semantic nuances of this lexeme are uncertain. Whether or not this is some specific type of dung is unclear.¹⁶

1.04. *(h₁)uh_xd^h-er/n- “udder”. Latin *ūber* “udder, teat”, Old English *ūder* “udder”, Lithuanian *pa-ūdre* “abdomen”, Greek οὔθαρ, οὔθαρος “udder”, Old Indic *ūdhar*, *ūdhnás* “udder”.¹⁷ Hittite *udne* “country, land” may, though not definitely,

¹⁴Under the criteria established and explained in 0.4.1. and 0.4.2.

¹⁵See 2.01 for a discussion of *kók^h-r/n-, also “dung”, and its possible connection to *sók-r/n-.

¹⁶Mallory and Adams (1997:186) suggest “human dung” in contrast with *kók^h-r/n-. However, the limited distribution of this second form hardly offers sufficient evidence to confirm or deny any significant lexical contrast between the two forms.

¹⁷Cf. Russian *výmja* and Serbo-Croatian *vime* “udder” < *ūd^h-men-. These Slavic formations raise an interesting complication. Both appear to be deverbative formations of the type *verbal root + *-men-. Formations of this type are non-productive within Slavic and, as such, must be treated as archaisms. Yet the archaism of the Slavic forms need not be of PIE antiquity. They may be analogical formations which date back to a time that postdated PIE, yet preceded Proto-Slavic. Ultimately, whether the *-r/n- formation is the true archaism or the Slavic formation in *-men-, is a question which is probably best treated within the context of what we know at this point about PIE. It is not clear whether the formant *-r/n- was still productive in PIE. The same

belong here (Sturtevant 1951:39). Compare the metaphoric use of the Greek and Latin forms as "most fertile land, richest land". An underlying IE heteroclitic formation is likely vouchsafed by the Vedic and Greek heteroclitic formations, though they form a well known dialect group, and, if the Hittite word is connected, a dismembered paradigm represented by the Hittite n-stem and Latin r-stem forms as well. The dialectal distribution suggests the word is of undoubted IE origin. The lexical content of this word should be reconstructed as **"udder". Clearly the form contains notions of fertility, richness and lactation, as suggested by Mallory and Adams (1997:82). However, the further suggestion of "lactating breast" found therein should be abandoned. This term seems clearly to be connected with animals only. The occasional semantic value of "human breast" is likely to be a later development, as in Homeric Greek "udder" > later Greek "udder, breast".

1.05. **uód-r/n-* **"water". Umbrian *utur*, *utne*, Old Norse *vatn*, *vātr*, Greek *ῥῶπ*, *ῥῶτος* (a collective formation), Hittite *uātar*, *uītenaš*, all directly attest heteroclis. Other Germanic languages outside of Old Norse attest a dismembered paradigm: Gothic *watō*, but Old High German *wazzar*. Likewise, Vedic *udán-*, *udnás* shows an n-stem, while Tocharian A *wär* B *war* may reflect an r-stem.¹⁸ There are no difficulties in reconstructing the lexical value of this word.

§2.0. Group 2. This group ultimately consists of words which, at most, are attested with heteroclis in only one or two daughter branches and some degree of supporting evidence, such as a dismembered paradigm, conflation or just cognates. To what degree does such a collection of data allow for the reconstruction of heteroclis in the parent language? Considering the antiquity of the formation, as cannot be said of the *-*men-* stem, which appears, on the basis of comparative evidence, to have been productive late in PIE or, at least, a post-PIE dialectal stage. As such, probability alone suggests that the Slavic *-*men-* form ousted the older, inherited heteroclitic formation.

¹⁸PIE *d was lost before consonants, including semivowels (Ringe 1996: 64). However, it is possible that the two Tocharian forms reflect IE **uéh₂-r* "water", as in Vedic *vár* (disyllabic).

well as the tendency of the daughter languages to thematize and analogically reshape these formations, perhaps any surviving simple **-r/n-* heteroclitic formation deserves considerable weight. Yet, ultimately the scantiness of solid information can only increase the possibility of misinterpretation and, thus, analytical error.

Some of these words do not attest a single direct simple **-r/n-* heteroclitic paradigm. They do attest a wide array of r-stem and n-stem formations across the IE daughter languages. Some of these forms have at most one **-r-* stem or one **-n-* stem. The probability that a lexeme, which boasts many r- or n-stem formations, of which only one of the two 'may' be an **-r-* or **-n-* stem, held heteroclitic status in PIE is not certain.¹⁹ Such words meet the minimum standard of plausibility set forth in 0.4.2. Naturally, the probability of all these forms rests on footing less sure than those forms of the first section.

2.01. **kókʷ-r/n-* "excrement". Old Indic *śákṛt*, *śaknás*, Greek *κόπρος*, Lithuanian *šikú* "defecate", New Persian *sargín* < **sagr-in*. Despite the similar appearance of the various outcomes from this root and those of 1.03, **sóġ-r/n-* "excrement", there is no way to link these two formations together phonetically. They must be treated as separate formations. To what extent has there been cross-contamination between these words of similar meaning? This question is difficult to answer. The two formations show a distribution among the IE daughter languages which may be considered partially complementary. Only the Indo-Iranian, Greek and Baltic branches of PIE attest both formations.²⁰ However, no single Baltic language, no single Indo-Iranian language reflects both forms. Greek

¹⁹Compare Schindler (1975:2-3) for similar criteria, but Benveniste (1935) for entirely different criteria.

²⁰The distribution of **kókʷ-r/n-* is limited to northern and eastern PIE. Whether western PIE lost, or even had it, is a question which can't be answered. There is some basis to suspect a dialectal innovation here, yet little direct evidence to support this hypothesis.

stands alone in this respect. Because of this, one may suspect some sort of syncretism or conflation between the two formations among the various daughter languages.²¹

Whether the two words reflect human versus animal excrement is conjectural.²² There are numerous reasons for any given culture to have more than one word for feces. Lacking strong, positive evidence, the exact semantic nuances of this word may not be recoverable.

2.02. **ǵeút-r/n-* “neck, gullet, throat”. Hittite *kuttar*, *kuttani*, Latin *guttur*.²³ Evidence for this word is scarce. While complex heteroclisis was clearly productive in Hittite, the same cannot be said of simple heteroclisis. For this reason the simple heteroclisis found within Hittite *kuttur* is likely to be archaic. That this formation reflects the root **ǵeu-* “bend” + an agent suffix *-ter- or a deverbative suffix of the same shape is mere guesswork and of little importance.²⁴ Despite the extremely limited distribution of this form, the form can hardly be taken as a dialectal innovation. A borrowing or loan from Hittite to Latin or vice versa is highly improbable. More evidence for this formation would bolster its probability as a genuine PIE form. Nevertheless, the probability for this form remains quite high due to the aforementioned reasons. The exact meaning of the form is likely that of

²¹This then forces the question: to what extent has the Vedic form, which is the only form to show heteroclisis from the root **kók-r/n-*, been contaminated by **sók-r/n-*? Ultimately, this question likely has to remain unanswered. In essence, the antiquity of this formation remains quite plausible, even probable, though the paucity of the evidence and the possibility of contamination increase the probability of analytical error in assessing this form. The exact degree to which this form's probability of IE inheritance is reduced is a subjective question. The importance any given evaluator assigns a particular aspect of this form's conjectured pre-history directly affects the degree to which the form may be deemed probable.

²²Mallory and Adams (1997:186). See footnote 14.

²³The geminated dental in Latin *guttur* is the result of the so-called “*littera* rule”, the transference of length from a preceding long vowel to a subsequent short consonant. Hence: IE **ǵeút-r* > Latin **ǵūtur* ~ Latin *guttur*.

²⁴Pokorny (1959: 394).

the “neck”, though the Hittite evidence is rather obscure lexically, seeming to reflect both “neck, strength” and, perhaps, “shoulders”.²⁵

2.03. **snē̃u-r/n-* **“sinew”*. Avestan *snāuuarə*, Old Indic *snāvan*, Latin *nervus* < **neuros* via metathesis, Greek *νεῦρον*, Armenian *neard*, English *sinew* and Tocharian B *ñnor*. Traditionally this form has been reconstructed as **snéh₁u-r/n-* or **snéh₁-ur/n-*.²⁶ The difficulty for most scholars has been whether this form is a deverbative formation from the root **snéh₁-* “spin”, the root **snéh₁u-* “spin” (which would be taken as an extended form of the first root) or an unrelated root **snẽu-*. **snéh₁u-* can be rejected outright as a possibility, as such a root does not exist.²⁷ This aside, Norbert Oettinger (1976:93) persuasively argues for the last root, **snẽu-*. He suggests the ultimate etymon **snē̃u-r/n-* on a number of bases. His most compelling argument stems from Latin *nervus*, which can only go back to a formation < **sneruos*. The *e* in *nervus* is short, and thus can neither reflect a base root **snéh₁u-* nor **snh₁u-*. For the issue at hand, this has the following consequence: the IE word for “sinew” cannot go back to a complex *-r/n- heteroclitic formation. The Latin formation shows that the lexical root did not contain a final laryngeal. According to the rules of IE root structure, the morpheme string **snē̃u-r/n-* cannot be broken into individual morphemes **sné̃u-r/n-*, as the lexical root would have the unacceptable shape (s)CRV-. Rather, the formation must be broken down as follows: **snē̃u-r/n-*, where the lengthened grade of the root vowel in forms like Avestan *snāuuarə* is explained by one of the two predicted IE ablaut grades for this formation (Schindler 1975) or else by Brugmann’s Law. Any connection with the IE root **snéh₁-* “spin”

²⁵See Friedrich (1952-1966: 121) for details.

²⁶Mallory and Adams (1997: 571), for example.

²⁷See Rix (1998: 520, 523).

must be rejected.

Indo-Iranian attests a dismembered heteroclitic paradigm for this word, while Hittite directly offers a heteroclitic formation (see 2.031 for discussion of Hittite *išḫunaṣar*, *išḫunaṣanas* "sinew"). Owing to the antiquity of the oldest Indo-Iranian material, as well as that of Hittite, postulating simple *-r/n- heteroclis for this word back into PIE is a safe assumption. The word, if not the exact morphological string, has widespread dialect diffusion, thereby ensuring its antiquity. The definition *"sinew" is well attested.

2.031. The Hittite formation *išḫunaṣar*, *išḫunaṣanas* "sinew" offers further difficulties for the understanding of this word. The anlauting syllable is difficult to reconcile with that of the other IE languages. Oettinger suggests the likeliest way to reconcile the differing forms is either to posit a loss of *-h₂- in the non-Hittite formations or a conflation of the IE root *seh₂- "bind", reflected in Hittite *išḫai* "bind", with a pre-Hittite *snaṣar/n- > *shnaṣar/n- via folk etymology.²⁸ Both suggestions are possible, yet difficult to prove. The exact connection of this Hittite form with those from the other IE languages must remain uncertain.

2.04. *d^hén-r/n- *"palm of the hand". Greek *θέαρον*, *θέαρον* "palm", Hesych. Greek *παλαιθέαρον* < *d^hén-ṇ-t-h₂, Old High German *tenar* "palm". The information on this lexical item is scant, yet likely sufficient for positing an underlying IE heteroclitic formation. Greek retains traces of the original paradigm, showing an *-r- stem formation in the simplex form of the word, and an *-n- stem reflex in a neuter plural compound form. The Germanic reflex indirectly supports this lexeme's claim for IE heritage with a *-ro- stem formation. The probability that these two branches,

²⁸Oettinger (1976: 96-97) discusses the matter in full. He rejects the notion that the ultimate IE form for "sinew" has the following morphological breakdown: *sh₂-nēy-r/n-.

each of a distinct areal subgroup, innovated this form at a dialectal level is extremely low. As such, the presence of this form within these two branches suggests the retention of an archaism. The actual semantic value of the form is likely that of *“palm”*, though the attestation of only two reflexes naturally increases the margin for analytical error.

2.05. **pónkʰ-r/n-* *“totality, whole, five fingers of the hand”*. Hittite *pankur*, *pankunaš* *“totality”*. The formation is difficult to assess. Some scholars prefer to see this formation as related to Hittite *pankuš* *“assembly”* < **bʰ(é)nḡh-u-* *“thick, abundant”*, Greek *παχύς* *“thick”*, Old Norse *bingr* *“heap”*, Latvian *biezs* *“thick”*, Old Indic *bahú-* *“much, many, abundant”*. However, the semantics of the derivatives of **bʰ(é)nḡh-u-* never express a semantic value of *“total, entire, complete”*, but rather one of quantity or thickness. However, while the semantic stretch from *“all”* > *“abundant, thick”*, which is necessitated by deriving *pankur* from **bʰónḡh-r/n-*, is possible, a connection with Latin *cūctus* *“entire, whole”* may be better.

Yet this connection is not without its problems either. On the one hand the Hittite and Latin forms are very different morphological formations, while on the other there may be a more viable etymology for Latin *cūctus*. From the standpoint of Latin historical phonology, *cūctus* must be a recent formation. An inherited Proto-Italic sequence **-nkt-* yields Latin *-nt-*, as in Latin *quintus* *“fifth”* < **penkʰ-tos*, alongside the analogically restored *quinctus*. Latin *cūctus* may thus be a late, syncopated verbal adjective of *concio* (< **kom* + **kejh₂*) *“move [people] together, assemble”* in place of the regular *concitus*. Further, this derivation does not hold the same semantic difficulties as **bʰénḡh-u-s* does for Hittite *pankur*. Yet the recent creation of *cūctus* does not invalidate a derivation from **pónkʰ-r/n-*. In this case, the presence of the sequence *-nct-* may be the result of a recent reshaping of a

morphologically non-productive heteroclitic formation. However, the lack of any attested evidence which might suggest an old heteroclitic paradigm, coupled with the fact that there exist no clear models or motives for such a drastic reshaping in Latin, suggests that *cūctus* is not the remnant of an old, heteroclitic paradigm.

If Hittite *pankur* does reflect an IE etymon **pónkʷ-r/n-*,²⁹ then the most likely source of **pónkʷ-r/n-* might ultimately be **pénk ʷe* "five" in the sense of ***"five fingers" > ***"entire hand" > ***"entire, totality". If this is the case, Gothic *figgars* "finger" may represent a semantic narrowing of this same lexeme from a different morphological formation. However, it is also possible that the Germanic form is not related etymologically. If the Germanic and Hittite formations are connected, they may point to an IE heteroclitic formation which is far more likely to be an archaic retention than a dialectal innovation. A further connection with Hittite *pankur*, *pankunaš* "part of an animal's body" is uncertain.³⁰

2.06. **pét-r/n-* ***"wing, feather". Hittite *pattar*, *paddanaš*, Greek *πτερόν*, Vedic *pátram*, Old Irish *én* "bird", English *feather*, among many other formations. Hittite directly attests a simple heteroclitic formation. The rest of the IE languages attest numerous **-ro-*, **-no-* formations, but cannot boast a dismembered heteroclitic paradigm.³¹ The word shows ample dialectal diffusion, assuring the lexical item of PIE status, if not the formation. Ultimately, whether this lexeme was heteroclitic or

²⁹For arguments for one side or the other see Gamkrelidze and Ivanov (1995:746), Melchert (1994:89) and Mallory and Adams (1997:3).

³⁰See 3.03 for discussion of this form.

³¹However, cf. Nussbaum (1986:13-14): "Somewhat more interesting is the observation that both the 'wing' and the 'horn' forms in *-no-* are of two types. Each set includes both 'mechanically' thematized forms and forms in which the thematic vowel has a function - that of marking a resulting *-n + o-* formation as an exocentric derivative of an *n-* stem." In other words, **pet-n-* has the value of "wing", but **pet-n-o-* means "winged". If this is the case, then we can reconstruct a dismembered paradigm for this lexeme.

not in PIE is a question that can only be answered subjectively. How much importance does one attach to the Hittite formation? It is probably a safer assumption to take the Hittite formation at face value, unless a clear source of analogy becomes apparent. The definition of the word can be safely reconstructed as *"wing, feather".

2.07. **h₂ei-er/n-* *"morning, early part of the day". Avestan *aiiarə*, *aiiān* (genitive singular < **h₂ei-en-s*) "day", Gothic *air* "early", Greek *ἤρι* "early". The heteroclisis attested in the Avestan formation³² may be the result of contamination from *azan*, *asn-* "day". However, this is probably not the case. Avestan *azan*, *asn-* (cf. Vedic *dhar*, *ahnds*) is not heteroclitic (see 3.04), while its oblique cases have an entirely different ablaut pattern.³³ The attestation of this lexeme shows limited distribution, appearing only in Greek, Iranian and Germanic. However, this distribution is not so limited that the form should be considered an isogloss.

2.08. Hittite *lammar*, *lamn-* "time, hour". This form likely goes back to an earlier **nóm-r/n-*, as Melchert suggests.³⁴ This same lexeme **nem-* "give, take" forms plenty of IE formations, such as Latin *numerus* (-*r-* < **-s-*), though only Hittite shows a heteroclitic paradigm. The Hittite form is probably not secondary or deverbative, as a semantic shift *"taken or given thing" > "time, hour" is not likely. As with 2.07 above, the lexeme shows a full dialect distribution, even if the formation does not. However, considering the nature of the formation, this is hardly surprising.

³²Nussbaum (1986:188) notes that **-en* locatives in Old Indic and elsewhere need not be the locatives of **-n-* stems or **-r/n-* stems. This is certainly true, but not likely the case for either Avestan *aiiarə* or *azan-* (Vedic *dhar*), which both show *n*-stem formations outside the locative singular, as in *asnām* (genitive plural < **h₂egh-n-om*) and *aiiān* (genitive singular < **h₂ei-en-s*).

³³Cf. *ayan-* vs. *asn-*.

³⁴Melchert (1994:82) offers the following dissimilation: **n* > *l* / *_nasal+nasal* (cf. Hittite *lāman* 'name' < **h₂ndēh₂niy*).

2.09. *ǵep-er/n- *‘‘mouth, lower part of the face’’. Avestan *zafarə*, *zafan* ‘‘(daevic) mouth’’, New High German *Kiefer* ‘‘jaw’’, English *jowl*. This root has phonological difficulties, showing an alternate form *ǵebʰ- (cf. Russian *zobat* ‘‘eat’’, Old Irish *gob* ‘‘snout, beak’’).³⁵ Only Iranian shows a heteroclitc formation for this root, while the dialectal diffusion at least includes eastern and northern PIE. The same difficulty in assessing *pét-r/n-, that is the attestation of heteroclitc in only one language, applies to this word as well. However, while some may conjecture that simple *-r/n- heteroclitc was still productive in Hittite, the same certainly cannot be said for Iranian.

2.10. *h₂ués-r/n- *‘‘spring time’’.³⁶ Greek *ἔαρ*, Armenian *garown*, Old Church Slavonic *vesna*, Old Welsh *guiannuin*, Middle Welsh *gwawr*, Vedic *vasarhā* ‘‘striking at dawn’’ (Rv. 1.122.3; 1x), *vasantā-* and *vāsarā-*, Avestan *vayri* < *h₂ués-r-i, Lithuanian *vāisara*. The exact origin of Latin *vēr* ‘‘spring’’ is a very difficult question. Whatever its exact history may be, there is little doubt that it belongs here. Greek, Avestan, Armenian, and Latin attest formations either directly from or built on *h₂ués-ǵ. Vedic may attest the remnants of heteroclitc. It is possible that *vasantā-* may derive from *h₂ués-ent-ó-, where the *-n- of the *-nt- suffix may be a vestige of an *-n- stem formant, as suggested by Mayerhofer (1986: II 532-3), but more likely reflects an underlying *-en- locative. Likewise, one cannot rule out the possibility that * *vasar-*, found in *vasarhā* may be an *-er- locative formation. If the *vasantā-* evidence is ruled out, it is not possible to reconstruct a dismembered paradigm from the Indo-Iranian evidence. Old Irish *fáire* (Middle Irish *fáir*), *fáinne* ‘‘spring’’, as well as Old Welsh

³⁵ Perhaps ultimately related with *ǵembʰ- *‘‘tooth’’.

³⁶ For the initial *h₂-, cf. Mayerhofer (1986: II.533).

guiannuin and Middle Welsh *gwawr*, may, however, constitute the remnants of heteroclisis. However, if *fáinne* actually reflects an underlying **h₂uōs-n-jo-*, it must be through the analogical extension of the nominative/accusative ablaut grade.³⁷ If one rejects the evidence supplied by Vedic and Celtic, then no daughter language attests an athematic **-n-* stem for this word. The remaining **-n-* stems here are thematized. Whether there is a remote possibility of recovering an old athematic **-n-* stem in forms like OCS *vesna* < **h₂ues-neh₂*, ** “spring” > ** “spring” (adjective) > “spring” (substantive) is doubtful.

2.11. **s₁uōp-r/n-* “sleep, dream”. Latin *somnus*, Lithuanian *sāpnas*, Vedic *svápna-*, Avestan *χ^hafna-*, Old English *swefn*, Greek *ύπνος*, Tocharian A *spāni*, OCS *sŭ nŭ*, Armenian *k^hown*, Albanian *gjumë*, Old Irish *sūan*, Welsh *hun*.³⁸ All these formations reflect a masculine noun **s₁uēp-no-*, though some reflect an o-grade and others a zero-grade. Greek *ύπnap*, Hittite *šuppariya-* both reflect an old neuter noun **s₁uōp-ŋ*.³⁹ Latin *sopor* may continue a collective form < **s₁uōp-ōr*, but this is only a possibility. The question remains: can the masculine **-no-* stems be connected with the neuter **-r-* stems via an archaic, neuter heteroclitc formation **s₁uōp-ŋ*, **s₁uēp-ŋ-s*, or the like? The answer remains elusive. Schindler (1966: 75n28) argues that it can, yet Watkins (1972: 558) rejects the connection.⁴⁰ There is no reason that these two distinct formations have to be connected.

³⁷See Pedersen (1913:Volume 2, p.106), as well as Schrijver (1995:446). The underlying formation of *fáire* < **fā-r-yo-* < **h₂uōs-r-jo-* is fairly certain, while *fáinne* < **fānn-yo-* < **uōsn-yo-* < **h₂uōs-n-jo-* seems to show the extension of **-ō-* into the oblique formations.

³⁸To this list may be added Hittite **šuppar*, gen. *šup(a)naš*, if the analysis of Onofrio Carruba (1998:79) is correct, as it appears to be.

³⁹See Vine (1999: section 5.3) for a detailed study on the precise ablaut grade of these two forms.

⁴⁰For a detailed discussion of this problem, see Vine (1999: section 5.2).

2.12. **h₁ós-r/n-* “time of the harvest, autumn”. Old High German *aran* “harvest”, Gothic *asans* “harvest time, summer”, Old Prussian *assanis* “harvest”, OCS *jesenĩ* “autumn”, Greek *ὁπώρη* “end of summer, harvest time”, Hittite *zena-*, *zenant-* “autumn”. These forms reflect various **-en-*, **-on-* and **-ro-* formations. It is possible that the Greek form *ὁπώρη* < **op* + **h₁os-r-eh₂* may reflect a thematized **-r-* stem, but the burden of proof falls on such an analysis. Does this collection of forms reflect a dismembered paradigm? The question is open-ended.

2.13. **meh₂-r/n-* “hand”. Old English *mund* < Proto-Germanic **m̥h₂-t-*⁴¹ “palm of the hand”, Latin *manus* < **mh₂-n-u-s* “hand”, Umbrian *manuve* “in the hand”, Greek *μάρη* < **mh₂-rēh₂* “hand”, Hittite *māniḫah₂*⁴² “hand over” and, perhaps, Albanian *marr* < **mar-n-(y)e/o-* “take, grasp”.⁴³ The precise protoform of these words is difficult to ascertain, as it is possible that not all of these words are related. Further, the formation type is even more uncertain, as no two IE branches attest the same morphological formation. We have no direct attestations of an **-r/n-* formation, though the Albanian verb *marr* may reflect a fossilized nominal form **marn-*, which could be a conflation of an older heteroclitc paradigm. The Italic formations are more difficult to analyze. They seem to suggest a rebuilt **-n-* stem. Another example within Italic of a more recent u-stem noun based on an old **-n-* stem may be found in Latin *cornu* ‘horn’, which likewise is a body part. The Hittite verbal form seems to be a denominative formation from an unattested noun **mān-*.

⁴¹**meh₂-n-* is metathesized to **m̥h₂-* in the Germanic formations (Mallory and Adams 1997:255).

⁴²Proto-Anatolian **maniyah₂-* yields Hittite *māniḫah₂*, as **a > ā* / open, accented syllable.

⁴³The precise etymology of Albanian *marr* is unclear. This connection with Greek *μάρη* et alia is only one of several which are in competition. For a detailed discussion of this word, see Demiraj (1997: 257-8).

Greek *μᾶρη* is a *-ro- stem. If these forms are related and these etymologies correct, we have, at the very least, evidence for a dismembered, heteroclitic paradigm of the type described in 1.4.2.

2.14. **jéh₁-r/n-* “year”. Avestan *yāra*, *yā* < **jéh₁-r*, *jéh₁-én-s*,⁴⁴ Latin *hōrnus* < **ho jōr-in-os* “of this year”, English *year*, Gothic *jēr*, Russian *jara* “spring”, Greek *ῥα* “time, year”, Luwian *āra/i* “time”. The Avestan formation is heteroclitic, while the Latin formation may show evidence for conflation, though this is uncertain at best.⁴⁵ The diffusion of this lexeme among the IE dialects is ubiquitous. The reconstruction “year” might be generalized, as Slavic and Greek both attest other definitions.

§3.0. Group 3. This group consists of heteroclitic formations which appear in a single daughter language without any supporting evidence.⁴⁶ How are such forms to be analyzed? Without further information there is no simple way of delineating a preserved archaism from an innovation or even a remodeled loan word.⁴⁷ Despite this, any attested heteroclitic formation deserves some degree of consideration. As mentioned in 2.0., the formation was clearly not productive and, as such, its survival in some direct form should not be dismissed as an innovation. Though innovation is a possibility, it seems more likely that analogical forces might

⁴⁴**jéh₁-en-s* > **jah₁-ans* > **yāNhi* > **yāh* > Young Avestan *yā* “des Jahres”. See Hoffmann and Forssman (1996:153).

⁴⁵Since *hōrnus* probably goes back to **ho jōr-in-os*, and not **ho jōr-nos*, there is little chance that the Latin form reflects a conflation.

⁴⁶Greek *ἄλειφαρ*, *ἄλειφατος* “unguent” does not belong here, as the formation is clearly a deverbative noun from *ἀλείφω*, which is an extended form of the IE lexeme **h₂lejh₂-* “smear”. For details on this root, see Rix (1998:247-8).

⁴⁷Greek *ἑκάμαρ*, *ἑκάμαρος* “wife, spouse” has the look of a heteroclitic formation, where the -*p-* of the nominative and accusative has been analogically inserted in the oblique cases. Even if this is the case, the form is ultimately a deverbative of **demh₂-* in all probability.

reshape, obscure or replace an archaic formation in many, if not most, of the daughter languages than create a single new form in one language. Ultimately, though, any of these forms must be dealt with on an individual basis.⁴⁸

3.01. Hittite *ḫaršar/n-* "head". Whether or not this word is related to Old Indic *śīrṣān* "head" < **ḱr̥h₂s-ér/n-* through some sort of dissimilatory process is disputed.⁴⁹ If this etymology is correct, then the form must be rejected outright, as it would be a secondary, or even tertiary, formation. As the connection remains in doubt, its putative connection with the Hittite formation provides little help in increasing the form's probability of IE inheritance. There remains the possibility that this formation breaks down into the morphological components *ḫar+šar*, but see Oettinger (1979:196) for an argument against this segmentation. As noted by Melchert (1994:164), there might be an etymological connection with Attic *ὄρος* "mountain", Avestan *ərəšuu-* and Old Indic *ṛṣvā-* "high",⁵⁰ though this connection is suspect as well.⁵¹

3.02. Latin *femur*, *feminis* "thigh". There are no known cognates to this form. The preservation of a heteroclitc paradigm in Italic is very rare, let alone one that hasn't been reshaped in one way or another. This fact alone argues that the form

⁴⁸Greek *ἄφνω* and Homeric *ἄφαρ*, both "straightaway, suddenly", are completely enigmatic. Both forms are without etymology. It seems quite possible that the two forms are related, being the remnants of a heteroclitc paradigm. Formally, it is clear that the forms are an old accusative, singular, neuter noun and an instrumental, singular of the same gender. Semantically, the forms ultimately seem best derived from a deverbative noun, though there is no direct proof of this. Unless further information on these forms is uncovered, it remains impossible to tell whether or not this form is deverbative.

⁴⁹See Melchert (1994:164) for disagreement against the proposed dissimilation of **ḱ...h₂* > **h...* **h* > *h...s*, as well as references to the argument's proponents.

⁵⁰A connection with Tocharian A *arūn*, B *ere* "face, appearance" has been suggested by Polomé (1952: 449f), though the connection is at the lexical root level and thereby not useful for the present purposes.

⁵¹Cf. Mayrhofer (1986:262).

may be extremely old.

3.03. Hittite *pankur*, *pankunaš* "part of an animal's body".⁵² This form's relation to IE **pónkʷ-ŋ* "complete hand of five" or **bʰn̥ǵʰ-u-* "abundant, thick" is completely uncertain. If the form is not connected to the above formations, then there appear to be no IE cognates for this word.

3.04. Proto-Indo-Iranian **ájhar*, *ajhnás* "day". Old Indic *dhar*, *ahnás*, Avestan *azan-*, *asn-*. This lexeme may be related to Proto-Germanic **day-* "day" (see 3.05), but the connection remains uncertain.⁵³ If the two are indeed related, then the probability that this lexeme (as well as the Germanic form, of course) reflects an old IE heteroclitlic formation rises considerably. Germanic and Indo-Iranian do not compose any dialectal subgroup, so there is no reason to posit a dialectal innovation here. The preservation of heteroclis in Germanic in any form (directly, dismembered paradigm, etc.) is very rare. From another vantage point, if the forms are related, then the statistical outcome of this study is altered, though only slightly. The Germanic formations aside, Old Indic and Avestan attest a clear heteroclitlic formation within Indo-Iranian. Whether there is contamination from the lexeme for "year" (see 2.14) is a difficult question. Without further information, any assertion in one direction or another is mere guesswork.

3.05. Old Icelandic *døgr*, *døgn* "half-day". May be related to PIr **ájhar*, *ajhnás*, but, as mentioned above, the connection remains uncertain. If the Indo-Iranian forms are not connected, this formation should be given considerable weight, as the presence of heteroclis in Germanic, as mentioned in 3.04, is extremely rare. The

⁵²See the CHD (1997:92-4) for a descriptive commentary on this word.

⁵³See Lehmann (1986), Puhvel (1987) and Mayrhofer (1986) for further discussion of a possible connection with the Germanic formation.

exact reconstruction of the protoform depends on the etymology which one prefers.

§4.0. Group 4. This group lies within the criteria set forth in 0.4.3, namely simple *-r- stems which boast no oblique formations. Why do these nouns, scattered among the various IE daughter languages, attest only nominative or accusative formations? Heteroclitis is a reasonable underlying possibility. For the reasons given in 0.4.3., the degree of this speculation is not necessarily as high as one might think. Unless a form is a deverbative or adjectival formation being used adverbially,⁵⁴ the factors underlying this phenomenon are not easy to understand. As such, every case must be treated individually, as there may be any one of a number of reasons actually underlying the attested declensional distribution.⁵⁵

4.01. *káp-r- "he-goat, animal penis, boar". Old Indic *kápr̥th* "penis", Greek *κάπρος* "boar", Old Irish *gabor* "he-goat", Welsh *gafr*, Old English *haefer*, Latin *caper*. There is little doubt that these words are related, or that the Old Indic form is likely the most archaic, both in terms of morphology and semantics. Vedic *kápr̥th* (RV only; 3x) attests no oblique formations. The morphological shape is suggestive of other Old Indic heteroclitic formations, which often show an enigmatic, unexpected extension similar to the -th- found in *kápr̥th*.⁵⁶ Of course, the lack of oblique

⁵⁴Such formations include Greek *εἶθαρ* and *ἴθαρ*, both "straightaway, at once, immediately", which are either adjectival/deverbative adverbs or chains of enclitic particles, as well as the Greek adverb *ἵκταρ* "closely together" (likely a deverbative adverb of the shape *verbal lexeme + *deverbative morpheme *-ter-). Greek *μακάρ* "blessed" is a difficult formation to analyze. Analyzed as a neuter noun by Benveniste (1935:18) and Schwyzler (1939:519), among others, the formation is, in fact, an adjective (Frisk 1960:162, Band II).

⁵⁵There are several *-r- stems within Greek which show no oblique cases: *σῶφαρ* "skin", *σκίναρ* "skin", *νόαρ* "phantasm, spectre" and *πῶαρ* "first milk". Not one of these examples has a known etymology or cognate. As their etymologies are obscure, so too is their precise morphological breakdown. As such, we cannot, without further evidence, state whether or not these words continue IE formations, let alone *-r/- heteroclitics. The restriction of these four aforementioned words to non-oblique cases may be the result of chance, as attestations of these forms are extremely scarce.

⁵⁶Cf. *ásr̥-k*, *asnás*, *yak̥t̥-t*, *yaknás* or *śák̥t̥-t*, *śaknás*.

attestations may be the result of chance.

4.02. $^{*}(h_1)é h_1 t_2$ *“lung, entrails, internal organ of some sort”*. Homeric (Aeolic) $\hat{\eta}\tau\omicron\phi$ “heart”, Greek $\hat{\eta}\tau\rho\omicron\nu$ “belly, abdomen”, Old High German $\tilde{a}d(a)ra$ “artery, vein”, Avestan $huuāθra-$ “ease, comfort” < *“well as to the internal organ(s) of some sort”*. This word is never attested with the meaning “lung”, though the probability that this was a very old word for lung (so old that its semantics generalized from *“lung”* to *“internal organ”* before a PIE date) seems assured by the connection with Old Indic $\tilde{a}tmān-$ “soul, breath of life” and German *Atem* “breath”.⁵⁷ This word attests no **-n-* formation. The Homeric formation $\hat{\eta}\tau\omicron\phi$ is surely the most archaic, which is attested only in the nominative or accusative. Post-Homeric $\hat{\eta}\tau\omicron\phi\iota$, the only oblique attestation of this word, occurs once in Greek (Simonides: 543.9) and may be the result of analogical leveling.

4.03. $^{*}h_3én-t_2$ *“dream”*. Homeric $\delta\nu\alpha\rho$ (2x; *Odyssey*; no oblique forms attested), Armenian *anowrj* < $^{*}h_3(e)n-\delta r-j\omicron-$ and, possibly, Albanian *ëndërr* (Tosk) and *ëndërr* (Geg).⁵⁸ Oblique formations of $\delta\nu\alpha\rho$ are built from the alternative formation $\delta\nu\epsilon\iota\phi\omicron\varsigma$. A suppletive paradigm might easily replace a Pre-Greek $\delta\nu\alpha\rho$, $^{*}\delta\nu(v)\omicron\varsigma$ < $^{*}h_3én-t_2$, $h_3n-n-\acute{o}s$ declensional pattern, if the suppletive refashioning occurred before the development of the **-t-* insertion among Proto-Greek heteroclitic formations. Otherwise the expected outcome would be $\delta\nu\alpha\rho$, $^{*}\delta\nu\alpha\tau\omicron\varsigma$, a paradigm for which a development like suppletion is more difficult to explain.

⁵⁷See Mallory and Adams (1997:359) for a similar analysis.

⁵⁸The precise etymology of the Albanian forms is a matter of some debate. The question remains: is the *-d-* epenthetic or is the word somehow connected with the IE lexeme $^{*}dreh_1-$ “sleep, dream”, as in the Vedic root *dra*? For a detailed discussion of the problem, see Demiraj (1997:171).

§5.0. Group 5. Each of these formations attests one serious difficulty which challenges the restrictions set up in section 0.1. As such, these forms should be rejected, though it is not impossible that they do indeed reflect genuine IE simple **-r/n-* heteroclisis.⁵⁹

5.01. **h₂uéd-r/n-* “living being, animal”. Hittite *huetar*, *huetnaš* “creatures, wild animals, wolf pack”, Old Norse *vitir*, *vitnir* “animal, wolf” < **h₂uéd-n-*. The evidence for this formation is meager. That the form is reflected in Hittite and Germanic only is not suggestive of a dialectal innovation, but rather an archaic retention. An underlying IE heteroclitc formation is suggested by the Hittite form, which is at least partially matched by the **-n-ijo-* formation of Germanic. The formation, however, may be derived. The lexical value of this word is open to some question, due to the generalized nature of its semantics, as well as the scantiness of the evidence. A survey of the various Germanic reflexes of this formation suggests that the “living thing” may be the primary definition of the word: Old English *wiht* “being, demon, matter”, Old Saxon *wiht* “spirit, being, demon, thing”, Old High German *wiht* “being, thing, wight” and, of course, Old Norse *vitir* “creature, wolf”.⁶⁰ The transformation of a lexeme “life” to “animal” by means of derivation is not unusual, as attested by Latin *anima* “life, soul, breath”, *animal* “animal”, as well as German *Tier* for “animal” < **d^hey-* “breath”. If this is the case, then the form should be discounted. Whether this is precisely the case is uncertain, but seems more probable than not.

5.02. Avestan *rāzārō*, *rāzōiig* “law, statute”, reflecting an underlying

⁵⁹One such example is Latin *ador*, *adōris* “spelt”. Nussbaum (1986:124, fn. 34) rightly points out that the vacillation in length of the *-ō-* in the oblique stem is best understood as the residue of an old, neuter collective of an amphikinetic **-r/n-* stem. Calvert Watkins’ (1975) idea that *ador* may be a deverbative of the lexeme **h₂ed-* “dry” (hence “dried stuff” > “spelt”) is likely correct as well.

⁶⁰All citations are from Lehmann (1986:388-9).

formation **h₃rēǵ-er/n-*. The lexeme **h₃rēǵ-* is widely attested across the IE daughter languages, possessing the semantic value “move in a straight line, extend, stretch”.⁶¹ There is a possibility that this formation is derived. The original semantic value of the Avestan form may have been “straight line”, which then shifted to “law, statute”. A typological parallel can be found in the English idiom “toe the line”, which of course has the meaning of “obeying an order or expectation”. If this is indeed the case, then this formation should not be considered a simple **-r/n-* stem, as per the definition in 0.1. The distribution of the lexeme is extensive, but not the formation. In this case, for the aforementioned reason, the form may be a dialectal innovation.

5.03. **h₃i-h₃iǵh₃-* “(violent) desire”. Greek *ἰχαρ*, Avestan *ižā-*, Old Indic *ihā-*, Tocharian B *ykässe*. The Greek form, which only occurs as such, is the only nominal form in connection with this lexeme which is an **-r-* stem. This form isn’t likely to have a heteroclitlic origin, as the formation appears to be reduplicated. No other heteroclitlic formations show reduplication.

5.04. **kúh₃-r/n-* “hole, ?”. Greek *κῦα* “hole of the ear, eye of the needle”, Latin *caverna* “cavern”, Armenian *sor*, Avestan *sūra-* “gap, hole”, Old Indic *sūra-* “lack”, *śūnya-* “empty, hollow”, Tocharian B *kor* “throat”. The Greek form, the only athematic **-r-* stem, attests no oblique cases, as well as an unusual *ø*-grade, which is characteristic of **-ro-* stem adjectives and substantives, but not heteroclitlic formations in the nominative/accusative. The Indo-Iranian, Armenian and Tocharian forms reflect **-ro-* stems. Latin *caverna* may show evidence for contamination, though it seems more likely that the form is an old **-ro-* stem, which has been remade as a **-no-* stem. Semantically, the word likely meant “hole”,

⁶¹Mallory and Adams (1997:187).

though, as is clear from the various reflexes of the IE form, this lexical value is easily mutable. As such, there is no guarantee that the meaning "hole" is primary and not secondary.

§6.0. Group 6. The following words, on account of their appearances in some IE languages, have been analyzed, mistakenly, as simple heteroclitic formations on occasion. Rather, these forms show complex heterocclisis. They violate the controls of this study set forth in 0.1, wherein formations of lexeme + complex heteroclitic morpheme (*-*uer/n-*, *-*ter/n-*, etc...) are explicitly rejected.

6.01. *-*péh₂-ur/n-* "fire". The various reflections of this formation are well known. Despite the appearance of Greek *πῦρ*, or Old Norse *fǫrr*, *funi* which would seemingly go back to *-*puh_x-r/n-*, there is legitimate evidence that the IE paradigm for this form was *-*péh₂-ur*, *-*ph₂-un-ós*. Aside from the Hittite evidence *paḥḫur*, *paḥḫuenaš*, forms like Greek *πυρός*, and Umbrian *purome*, both reflect *-*u-* and not *-*ū-*. Ultimately, however, it is impossible to state definitively whether this formation contains an *-*r/n-* stem or a *-*uer/n-* stem, thereby violating the controls established in 0.1.

6.02. *-*séh₂-ur/n-* "urine". Though this etymology is not universally accepted, there are some grounds for connecting the following words: Hittite *šeḫur* "urine", CLuwin *dūr*, *dūn* "urine", Old English *sūr* "sour", Old Prussian *suris* "cheese", Lithuanian *sūras* "salty", Latvian *sūrs* "salty, bitter", OCS *syřŭ* "cheese, raw, wintry, showery, wet".⁶² Latin *ūrīna* < *-*uh_x-ih_x-nēh₂* "urine", which is a derivative of

⁶²Further evidence for the etymology may be seen in the old, northern European practice of urinating on shark meat as a method of spoilage retardation. This would provide a semantic link between the seemingly incongruous definitions "urine" and "sour, bitter".

* $\mu\acute{e}h_1r$ - “water”, probably does not offer a typological, semantic parallel of “water” > “urine” to the OCS and Anatolian forms, as the OCS form likely reflects a conflation of two distinct etyma: * $su\acute{h}_2ro$ - “salty, bitter” and * $skuh_1ro$ - “shower, rain-storm.”⁶³ Even if the etymology is correct, it is likely that the non-Anatolian forms have undergone laryngeal-resonant metathesis, as in the word for “fire”.

6.03. * $m\acute{e}h_2ur/n$ - “measure of time”. As with * $p\acute{e}h_2ur/n$ - and * $s\acute{e}h_2ur/n$ -, the exact, underlying segmentation of Hittite *meḫur*, *meḫunaš*, likely does not reflect an *- r/n - formation. Though, of course, ultimately we can’t rule out the possibility that the Hittite form reflects an *- r/n - formation of a hitherto unknown long-diphthong root * meh_2u -.

6.04. Hittite *uttar*, *utnas* “action, speech, thing”, Cuneiform Luwian *utar*. Different etymologies abound around these two forms. A preform of the sort * $uk\acute{u}tar$ is likely incorrect, despite the attractive comparison with Hittite *luttāi*- “window” stemming from a theoretical * $luk\acute{u}t$ - (Melchert 1994:156). Melchert suggests an etymon * $\acute{e}mut/utn$ - (1994:50). However, considering the lexical value of this noun, it seems more probable to take this noun as a deverbative formation from a form * $h_2\mu ed$ - “speak”, as reflected in Old Indic *vad* and Greek *avδ-*, of the shape * $h_2\mu\acute{o}d-t\acute{r}$ (Mayrhofer 1986:496).⁶⁴

§7.0. Group 7. The following words also violate the controls as set forth in 0.1 against complex heteroclitic morphemes. In some cases whether or not a formation

⁶³The old idea of K. Būga (1908:148).

⁶⁴On the transformation of * $\#h_2\mu o$ - > Hittite $\#ua$ -, see now (Ofitsch 1998).

is simple or complex is unclear.⁶⁵ However, lacking evidence which demonstrates positively that a formation is simple (as opposed to the word for “sinew”), it is merely speculation as to whether a form is simple or not.⁶⁶ Most cases, however, are clear, and those cases I have omitted.

7.0.1. **b^hrēh₁-ur/n-* “fountain”. Greek φρέαρ, Armenian *albiwr*, Gothic *brunna*. The morphological cut is uncertain. Perhaps, as some suggest, the root is **b^hrēh₁u-*. However, considering the productivity of the suffix **-uer/n-*, as well as the postulated root shape **CRVHR*, a violation of IE root structure (though a root extension may be considered here), this segmentation seems less probable.

7.0.2. **p^hh_x-ur/n-* “fat”. Greek πῖαρ, πῖον, πῖρα, Old Indic *pīvan-*, *pīvas-*, *pīvati*. This is clearly a deverbative formation from the root **peih_x-* “swell”.

7.0.3. Hittite *Giš^hpattar/n-* “small wooden bowl or basket”. This formation may be connected with Greek παράνη and Latin *patina*. The shape of the collective material suggests a lexeme of the shape **peth₂-*, though this lexeme may be some sort of trading term of non-IE origin. Organic sequences of medial Proto-Anatolian **-t+h-* simplified to **-t-* in what may be called Pre-Hittite (Melchert 1994:156). In light of further comparative evidence there seems to be no way of knowing whether this formation ultimately reflects something like an IE **pót-r/n-* or a Hittite formation of the type **lexeme + *-ter/n-*. It seems preferable to etymologize *Giš^hpattar* as a Hittite creation of the type *lexeme + the agent suffix -tar-*, since this word denotes a tool.

⁶⁵Greek ἱκραρ “*pudendum muliebre*” is exactly such a case. The form is etymologically obscure. The word’s morphological breakdown must be ἱκ-ραρ, due to root structure considerations. This form, like those in section four, attests no oblique formations.

⁶⁶See Schindler (1975:2) for similar thoughts concerning such formations.

Regardless, the form is morphologically ambiguous.

7.0.4. Hittite *šeššar* “beer(?)” poses similar problems. Hittite *šeššar* may be compared to the IE etymon **ses(i)o-* “grain”, reflected in Hittite *šeša(na)-* “fruit”, Avestan *hahiiā-* “providing grain”, Old Indic *sasyam* “grain, fruit” and *sasa-* “grass, field” (Mallory and Adams 1997:236). If this is the correct etymology, wherein the original lexeme was **ses-*, it is impossible to know whether we are dealing with an underlying **séš-r* or **séš-sr* or the like. If the etymology is wrong, the underlying phonetic possibilities simply increase.

7.0.5. Hittite *tieššar* “wood” contains this same ambiguity. As this word is without direct IE cognates, it is impossible to know the precise phonetic sequence underlying the form. The medial *-šš-* grapheme may be reduced to several possible consonant clusters, which may be the end product of a lexeme + a complex heteroclitc morpheme.

7.0.6. Avestan *bažuuarə*, *bažuuān-* “ten thousand”. This form has no cognates. The morphological segmentation is unknown, but likely contains the well-known suffix **-mer/n-*.

7.0.7. Greek *ἡμαρ*, *ἡμέρας* “day”, Armenian *awr*. The etymology for these two forms is uncertain. As such, the morphological breakdown of this word is completely ambiguous, though it may well possess the suffix **-mer/n-*. Regardless of the etymology, the form is likely a Greco-Armenian isogloss and should not be considered an IE protoform.

§8.0. What follows is a shorthand listing of the data compiled in sections one

through four. Groups five through eight are not included, as they do not meet the criteria established under controls for plausibility in 0.1.

8.1. Group One

- | | |
|-------------------------|------------------|
| (1) liver (1.01) | (2) blood (1.02) |
| (3) excrement #1 (1.03) | (4) udder (1.04) |
| (5) water (1.05) | |

8.2. Group Two

- | | |
|-------------------------------|------------------------|
| (1) excrement #2 (2.01) | (2) neck (2.02) |
| (3) sinew (2.03) | (4) palm (2.04) |
| (5) five-fingered hand (2.05) | (6) wing (2.06) |
| (7) morning (2.07) | (8) time, hour (2.08) |
| (9) jaw (2.09) | (10) springtime (2.10) |
| (11) sleep (2.11) | (12) autumn (2.12) |
| (13) hand (2.13) | (14) year (2.14) |

8.3. Group Three

- | | |
|-------------------------------|------------------|
| (1) head (3.01) | (2) thigh (3.02) |
| (3) animal's body part (3.03) | (4) day (3.04) |
| (5) half day, day (3.05) | |

8.4. Group Four

- | | |
|-------------------------|-----------------|
| (1) animal penis (4.01) | (2) lung (4.02) |
| (3) dream (4.03) | |

§9.0. A quick semantic analysis of the forms above yields the following observation: most of these lexical items can be grouped into one of two lexical subgroups.

9.1. Subgroup one is composed of body parts, elements and processes. For many of these lexical items there is no way of knowing whether or not they were restricted to humans, animals or whether there was no restriction at all. The following forms meet the above semantic requirement: liver, blood, excrement #1, udder (all from group one), excrement #2, neck, sinew, palm, hand of five fingers, wing/feather, jaw (group two), thigh, head, part of an animal's body (group three), animal penis, dream and lung (group four).

9.105. Water (group 1) may have been considered a part of the body. Though there is no direct evidence for this, it is not uncommon for cultures to conceive of the body as composed of elemental features such as fire, air or water. However, this assumption need not be made.

9.12. Statistical breakdown by group.

(1) Group 1 - 4 of 5 (80%), 5 of 5 if water is counted (100%).

(2) Group 2 - 9 of 14 (64%).

(3) Group 3 - 3 of 5 (60%).

(4) Group 4 - 3 of 3 (100%).

Total: 19 of 27 (70%) or 20 of 27 (74%).

9.13. In terms of probability, the four groups can be broken down as follows: group one is the highest probability tier, group two is of lesser probability than the first, and groups three and four are of lesser probability than the second group,

thereby forming tier three. Statistical breakdown by probability tier:

(1) Tier 1 (most probable; group one) - 4 of 5 (80%), or 5 of 5 (100%).

(2) Tier 2 (group two) - 9 of 14 (64%).

(3) Tier 3 (groups three and four) - 6 of 8 (75%).

9.20. A second subgroup can be seen within the lexical inventory: units of time. The following forms fall under this semantic grouping: morning, time (hour), springtime, autumn, year (group 2), day, and (half-)day (group 3).

9.21. Statistical breakdown by group:

(1) Group 1 - 0 of 5 (0%)

(2) Group 2 - 5 of 14 (36%)

(3) Group 3 - 2 of 5 (40%)

(4) Group 4 - 0 of 3 (0%)

9.22. Statistical breakdown by tier of probability:

(1) Tier 1 - 0 of 5 (0%)

(2) Tier 2 - 5 of 14 (36%)

(3) Tier 3 - 2 of 8 (25%).

9.23. Total statistical breakdown: 7 of 27 (26%).

9.30. Total statistical breakdown of all forms which cannot be classified in either subgroup of the two postulated subgroups: 1 of 27 (3.7%) or 0 of 27 (0%).

§10.0. It has often been observed that the lexical inventory of IE heteroclitic

formations contains very basic vocabulary items, such as body parts. It is not uncommon to find references that hint at some connection between the archaism of the formation and the archaism found within the lexical inventory, as though it were natural in some way to find core vocabulary items with archaic grammatical patterns.⁶⁷ This observation is illogical and misleading. Why should there be any connection between archaic formation types and basic lexical items? Unless one believes that PIE or a relatively recent ancestral language to PIE was glottogenic, there is no reason to hold this assumption. Basic lexical terms have been around for tens of thousands of years or longer. Grammatical formations change quite easily. It is unlikely that core vocabulary items, like body parts, are likely to maintain a specific morphological pattern for, say, one-hundred thousand years or more (the approximate span of existence for *homo sapiens sapiens*).

A connection between heteroclis (to say nothing of the type of heteroclis) and body parts has long been cited.⁶⁸ As demonstrated above, this is in part accurate. However, it is clear that a connection between simple **-r/n-* heteroclis and body parts and functions is far more accurate. Fifty-six to fifty-nine percent (15 or 16 of 27; citing all formations), or sixty to eighty percent (3 or 4 of 5; citing only the most secure) of the lexical inventory above refers solely to body parts, while seventy to seventy-four percent (19 or 20 of 27) refer to body parts or functions. This percentage rises to between eighty and one-hundred percent, if only the most secure reconstructions are cited.⁶⁹

⁶⁷For example Sihler (1995:298).

⁶⁸Markey (1984), for example, suggests a lexical theme of 'unseen body parts'. His data pool is both smaller than that considered here (ten or so forms) and subjective, as he poses extremely lax morphological constraints on his chosen citations. References to some sort of connection between heteroclis and body parts are common and do not merit a detailed survey.

⁶⁹Other connections have been suggested. Shields (1979) suggests that the simple **-r/n-* formant is an old ergative marker. He then connects this simple formant with the complex formation of the agent suffix **-ter/n-*. His selection of data contains ten items, chosen without specific constraints. This idea is imaginative, but clearly mistaken. How a term like "liver" (which is included among Shields' list!) could be the subject of a transitive verb is entirely unclear.

What has never been noted is the connection between simple **-r/n-* heteroclis and units of time. Twenty-six percent (7 of 27) of the vocabulary cited above pertain to units of time. If one compounds the data of the two lexical subgroups marked by simple **-r/n-* heteroclis, it may be observed that ninety-seven to one-hundred percent (26 or 27 of 27) of simple **-r/n-* heteroclitic formations can be equated with one of two lexical categories. For this reason alone, there can be little doubt that the stem formant **-r/n-* is an old, lexical, class marker.

Can the two subgroups be connected via some larger lexical trait? Possibly. However, they need not be. Phonological change, among several other possibilities, often submerges two distinct lexical groups into a larger group.⁷⁰ This process is widely attested in languages with a high number of noun classes. The conclusion to be drawn here is that the simple **-r/n-* stem formant clearly demarcated a lexically based grammatical category, specifically body functions and parts, as well as units of time, at some point in its history, either in PIE or before.⁷¹ The prehistory of the Proto-Indo-European nominal class system⁷² ought to be reconsidered, bearing this conclusion in mind. This issue cannot, however, be pursued further here.

References

Benveniste, Emile. 1935. *Origines de la formation des noms en indo-européen*. Paris: Adrien-Maisonneuve.

⁷⁰For an example of this linguistic phenomenon, see the study of Demuth, Faraclas and Marchese (1984) on the change over time within noun class systems of the daughter languages of Proto-Benue-Congo and Proto-Bantu.

⁷¹My personal thanks to my friend Antone Minard and my Professor Raimo Anttila for their efforts in shaping this paper. In particular I would most like to thank Professor Vyacheslav Ivanov and Professor Brent Vine, both of whom are, in many ways, behind whatever is good within this paper.

⁷²The IE gender system is not really a gender system at all, as has long been shown, but, more accurately, a small noun class system. However, due to the primacy of IE studies in comparative and historical linguistics, secondary literary sources often equate the term 'gender' with that of 'class'.

- Büga, K. 1908. Aistiški Studijai. RFV 75.148. Teil I.
- Carruba, Onofrio. 1970. *Das Palaische. Texte, Grammatik, Lexicon*. Wiesbaden: Otto Harrassowitz.
- 1998. *Etymologica anatolica minora. Mfr curad: Studies in honor of Calvert Watkins*. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.
- Chantraine, P. 1968-80. *Dictionnaire étymologique de la langue grecque*. Paris: Klincksieck.
- CHD: *The Hittite Dictionary of the Oriental Institute of the University of Chicago*. Güterbock, Hans G. and Harry A. Hoffner, eds. 1997. Volume P. Chicago/London: University of Chicago Press.
- Demiraj, Bardhyl. 1997. *Albanische Etymologien*. Amsterdam/Atlanta: Rodopi.
- Demuth, Katherine, Nicholas Faracas and Lynell Marchese. 1984. Niger-Congo Noun Class and Agreement Systems in Language Acquisition and Historical Change. Colette Craig, ed., *Noun Classes and Categorization*, 453-471. Philadelphia/Amsterdam: John Benjamins.
- Egli, Jakob. 1954. *Heteroklisie im Griechischen mit besonderer Berücksichtigung der Fälle von Gelenkheteroklisie*. Zürich: Juris-Verlag.
- Friedrich, Johannes. 1952-66. *Kurzgefasstes Hethitisches Wörterbuch*. Heidelberg: Carl Winter.
- Frisk, H.F. 1960-72. *Griechisches Etymologisches Wörterbuch*. Heidelberg: Carl Winter.
- Gamkrelidze, T.V. and V.V. Ivanov. 1995. *Indo-European and the Indo-Europeans: a Reconstruction and Historical Analysis of a Proto-Language and a Proto-Culture*. Berlin/New York: Mouton de Gruyter.
- Haudry, Jean. 1982. *Préhistoire de la flexion nominale indo-européenne*. Lyon: Institut d'études indo-européennes de l'Université Jean Moulin.
- Hoffman, Karl and Bernhard Forssman. 1996. *Avestische Laut- und Flexionslehre*. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.
- Lehmann, Winfred P. 1986. *A Gothic Etymological Dictionary*. Leiden: E.J. Brill.

- LSJ: *Greek-English Lexicon*, compiled by H.G. Liddell and R. Scott, revised and augmented by H.S. Jones and R. McKenzie, with a revised supplement. 1996. Oxford: Clarendon Press.
- Macdonell, A.A. 1910. *Vedic Grammar*. Strassburg: Karl J. Trübner.
- Mallory, J.P. and D.Q. Adams, eds. 1997. *Encyclopedia of Indo-European Culture*. London and Chicago: Fitzroy Dearborn Publishers.
- Markey, T.L. 1984. The Grammaticalization and Institutionalization of Indo-European *Hand*. *JIES* 12, 3&4. 261-292.
- Mayrhofer, Manfred. 1986-. *Etymologisches Wörterbuch des Altindoarischen*. Heidelberg: Carl Winter.
- Melchert, H. Craig. 1993. *Cuneiform Luvian Lexicon (Lexica Anatolica 2)*. Chapel-Hill: self-published.
- 1994. *Anatolian Historical Phonology*. Amsterdam and Atlanta: Rodopi
- Meriggi, Piero. 1962. *Hieroglyphisch-Hethitisches Glossar*. Wiesbaden: Otto Harrassowitz.
- Nussbaum, Alan J. 1986. *Head and Horn in Indo-European*. Berlin/New York: de Gruyter.
- Oettinger, Norbert. 1976. Indogermanisch *s(h₂)ne₁r/n- 'Sehne' und *(s)men- 'gering sein' im Hethitischen. *MSS* 35.93-103.
- 1979. *Die Stammbildung des Hethitischen Verbums*. Nuernberg: Verlag Hans Carl.
- Ofitsch, Michaela. 1998. Bemerkungen zur Regel idg. *#h₂wo- > heth. #wa-. *Historische Sprachforschung* 111. 225-241.
- Pedersen, Holger. 1909-13. *Vergleichende Grammatik der Keltischen Sprachen*. Two volumes. Göttingen: Vandenhoeck & Ruprecht.
- Petersson, Herbert. 1922. *Zur Kenntnis der Indogermanischen Heteroklisie*. Leipzig: Otto Harrassowitz.
- Pokorny, Julius. 1959. *Indogermanisches Etymologisches Wörterbuch*. Bern: Franke.
- Polomé, Edgar C. 1952. On the Source of Hittite *j*. *Language* 28.444-456.

- Puhvel, Jaan. 1987. All our 'yesterdays'. *Festschrift for Henry Hoenigswald*. Tübingen: Gunter Narr Verlag.
- Ringe, Donald. 1996. *On the Chronology of Sound Changes in Tocharian. Volume 1. From Proto-Indo-European to Proto-Tocharian*. New Haven: American Oriental Society.
- Risch, Ernst. 1974. *Wortbildung der homerischen Sprache*. Second edition. Berlin/New York: Mouton de Gruyter.
- Rix, Helmut. 1998. *LIV Lexicon der Indogermanischen Verbum*. Wiesbaden: Dr. Ludwig Reichert Verlag.
- Schindler, Jochem. 1966. Bemerkungen zum idg. Wort für "Schlaf". *Sprache*. 12.67-76.
- 1975. L'apophonie des thèmes indo-européens en -r/n. *BSL* 70.1-10.
- Schrijver, Peter. 1995. *Studies in British Celtic Phonology*. Amsterdam/Atlanta: Rodopi.
- Schwyzler, Eduard. 1939-50. *Griechische Grammatik*. München: C. H. Beck'sche Verlagsbuchhandlung.
- Shields, Kenneth. 1979. More on Early Indo-European Nominal Inflection: the Origin of the -R-/-N- Stems. *JIES* 7, 3&4. 213-226.
- Sihler, Andrew. 1995. *New Comparative Grammar of Greek and Latin*. Oxford: Oxford University Press.
- Stang, Christian. 1966. *Vergleichende Grammatik der baltischen Sprachen*. Oslo: Universitetsforlaget.
- Starke, Frank. 1990. *Untersuchung zur Stammbildung des keilschrift-luwischen Nomens*. Wiesbaden: Otto Harrassowitz.
- Sturtevant, Edgar H., and Adelaide E. Hahn. 1951. *A Comparative Grammar of the Hittite Language*. New Haven: Yale University Press.
- Szemerényi, Oswald. 1996. *Introduction to Indo-European Linguistics*. Oxford: Oxford University Press.
- Tischler, Johann. 1977. *Hethitisches Etymologisches Glossar*. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

- Vine, Brent. Forthcoming. On "Cowgill's Law" in Greek. *Compositiones indogermanicae in memoriam Jochem Schindler*, ed. H. Eichner and H.C. Luschützky.
- Wachter, Rudolf. 1997. Das Indogermanische Wort für 'Sonne' und die angebliche Gruppe der *l/n*-Heteroklitika. *HF* 110.4-19.
- Watkins, Calvert. 1972. An Indo-European word for "dream". *Studies for Einar Haugen* (ed. E.S. Firchow et al.), The Hague: Mouton.
- 1975. Latin *ador*, Hittite *ḫat-*, Addenda to *Harvard Studies in Classical Philology* 77, 1973.187-193. *Harvard Studies in Classical Philology* 79.181-187.

1. Most Latin verbs in *-ināre/-ināri* are transparently denominative, based on adjectives in *-inus*: e.g. *supināre* [Virg.+] 'throw onto the back' (cf. *supinus* [Plt.+] 'lying on the back'), or *peregrināri* [Cic.+] 'sojourn abroad' (cf. *peregrinus* [Plt.+] 'foreign'). The pattern is disrupted only slightly in a case like *coquināre/coquīnāre* [Plt.] 'be a cook' (cf. *coquīnus* 'pertaining to cooking', *coquina* 'kitchen; cookery' [Plt.+]), where the short-vowel variant is almost certainly generated secondarily via iambic shortening (Petersmann 1977:208, citing the **cocināre* of Romance [Span. *cocinar* etc.] in support of the basic *-i-*). But apart from isolated forms that may have special explanations,¹ there is a second class of Latin verbs in *-ināre/-ināri* that is generally thought to reflect a quite different sort of denominative origin, the best-known exemplar of which is *festināre* 'hurry'.

2. In a short paper on Lat. *festināre* and its cognates in British Celtic, P. Schrijver (1990) has sought to elucidate certain formal and derivational details connected with the Latin verb and its close relative Lat. *cōnfestim* 'quickly, immediately'.

As for the form, he shows that the Celtic material — principally W. *brys* m. 'haste' — is best taken to derive from a zero-grade *ti*-stem **b^hris-ti-* (as opposed to the full-grade **b^hers-ti-* traditionally assumed), and that the same

¹ E.g. *ūrināre/-i* is sometimes said to be a "Latinization" of Gk. οὐρεῖν 'to urinate', with *ūrina* 'urine' back-formed from the verb (thus Leumann 1977:328, 552). But *ūrināre/-i* does not in fact mean 'urinate' (rather 'dive, become submerged'), and is probably better taken as a denominative to *ūrina* that preserves its archaic sense 'water', cf. Ved. *vār*, Av. *vār-*, CLuv. *wa-a-ar(-ša)* (Watkins 1987:402 = 1994:1.312; on the morphology of *vār* etc., see now Ivanov 1997). In forms of the type (*dē/-in-*)*clīnāre* < **klej-nā-* (on which see recently Rix 1995:404f.), the *-i-* is of course part of the root.

source may underlie the stem *festi-* of Lat. *cōnfestim* as well (for the phonology, cf. *testis* < **tristis*, among other such forms).

Derivationally, the verb *festināre* has traditionally been taken as a denominative to a presumed "*tiōn-stem*" **festiō* (this form being derived from the *festi-* appearing in *cōnfestim*), with an oblique stem **festin-* serving as the basis of the denominative. Schrijver thus addresses the question, as he puts it: "[H]ow does a form **festin-* (not **festiōn-*) fit in with the paradigm of *tiōn-nouns*?" (1990:243). He first notes the existence of similar alternations **(t)iōn-/*(t)in-* in Osco-Umbrian (for the oblique: e.g. O. *leginum* 'legionem', U. *natine* 'natione'), together with, first of all, the unlikelihood of a direct PIE source for such an alternation,² and secondly, the possibility of interpreting Osco-Umbrian **(t)in-* as a syncope product of **(t)i(i)ōn-*. These considerations lead to the assumption of a morphologically ordinary inflection **(t)iōn-/*(t)iōn-*, which can also be assumed for Latin, where the development of medial **-iōn-* (in open syllable), whence **-iin-* and **-in-*, is likely to be phonologically regular. Schrijver concludes, then, that "*festināre* reflects a direct parallel to the Osco-Umbrian *leginum*-inflection; and points to the existence of a **-iōn-/iōn-* > **-iōn-/in-* inflection in Primitive Latin" (1990:244). Following Osthoff (1895), Schrijver assumes that although this inflection was not maintained in Latin, "[d]enominative verbs in *-ināre* based on *-iōn-* stems were apparently created before the long *-ō-* was generalized throughout the Latin paradigm".

In formal terms, the assumption of a zero-grade *ti-* stem is a distinct improvement over the traditional full grade; and for Latin, the presumed phonological development **-iōn-* > **-iin-* > **-in-* is not problematic.³ Derivationally, the hypothesis of a regular alternation **(t)iōn-/*(t)iōn-* is clearly attractive for Osco-Umbrian forms of the *leginum* type, and the idea of setting up a similar pattern for corresponding *n-* stems at some early stage of Latin has an obvious appeal, at least at first glance. But this theoretical appeal

² Differently X. Tremblay (1996:36n17), operating with a zero-grade *n-* stem form **-tih₂-n-* for U. *natine* and Lat. *festināre* (Lat. nom. *-tiō* < **-tih₂-ōn*); but for *festināre*, see below on the absence of the presumed basis **festiō*.

³ Cf. several recent discussions of the treatment of medial **-i(i)V-* in open syllables in Latin (and Italic), e.g. M. Weiss (1993:30f., 1996:673), I. Livingston (1997:2-4).

must be tempered by certain reservations arising from the analysis of *festināre* itself. To begin with, the presumed derivational basis, namely the *n*-stem **festiō*, is in fact unattested. To be sure, Lat. *-tiōn-* is an "Ersatz und Erweiterung der alten Verbalabstrakta auf *-ti-*", which is in fact "produktiv" (Leumann 1977:366); but this does not mean that, given the existence of a **festi-* 'haste' (cf. *cōnfestim*), a **festiō* can be assumed without further ado, especially since this **festiō* is apparently synonymous with the original (and vestigially surviving) **festi-*, rendering opaque the rationale for using **festiō* (as opposed to **festi-*) as the basis for the denominative.⁴ Nor can one appeal to any propensity of *-tiōn-* nouns (as opposed to *-ti-* nouns) to form denominatives: although denominative verbs in *-(t)iōnāre/- (t)iōnāri* are attested with certainty, few are very common,⁵ and none is particularly old. What is actually attested is **festi-* 'haste' (in *cōnfestim*) and the adj. *festinus* 'hasty' (the latter not mentioned by Schrijver); ceteris paribus, it would be preferable to be able to derive *festināre* directly on the basis of one or both of these forms, without having to appeal to an otherwise unattested **festiō*. (I return below [§5.] to certain questions surrounding *festinus*.)

3. Also troubling is the apparent status of *festināre* as the sole representative, at least in Schrijver's treatment, of an alleged class of "[d]enominative verbs in *-ināre* based on *-iōn-*stems". Although Schrijver's phrasing alludes to the existence of other such cases, he names none; conspicuously lacking, in particular, is any mention of Lat. *opināri* (OLat. also *opināre*) 'suppose, conjecture',

⁴ The synonymy of **festi-* and **festiō* is suspect in itself: as far as one can judge from existing cases, this is not what one would expect from such parallel formations: cf. Lat. *mēns* 'mind' beside *mentiō* 'mention'. (Conversely, the semantic similarity between *gēns* 'clan, stock, tribe etc.' and *nātiō* 'tribe, nation etc.' points, if anything, in the same direction, since *gēns*, which lacks any trace of the expected laryngeal of an ideal **ǵnh₁-*ff-, is transparently a relatively late creation; see recently Schrijver 1991:330.)

⁵ The only ones occurring with any frequency are *cōntiōnāri* 'to hold forth in an assembly; be convened' and *auctiōnāri* 'to hold an auction', both Cic.+.

traditionally coupled with *festināre* as an example of the same sort of derivation.⁶ Nevertheless, *opināri* does not appear to be a promising case of this sort.

The idea that *opināri* derives from (the weak alternant of) an *n*-stem **opiōn-* depends on the gloss *praedotiant* 'praeoptant' (Fest. 222.24 L, so printed by both Lindsay and Mueller, the latter with *crux*⁷), traditionally emended to *praedopiant*. This conjecture is then thought to justify the existence of a verb **opiō/*opere* (assumed to be the basis of *optāre* 'choose'), from which can derive an *n*-stem abstract **opiōn-*, of the type *legō/legere* : *legiōn-* etc. The fragility of this construction need not be emphasized.⁸ As for the conjecture itself, one cannot help but agree with Thurneysen ("sehr zweifelhafte Conjectur", 1879:31 = 1991:132); among other problems, the prefix form *praed-* (an *unicum*) is particularly difficult to justify.⁹ Nor is there any reason to believe that a form more immediately underlying *optāre* (if in fact it does, cf. n. 7) would also underlie *opināri*. In sum, there is simply no real evidence, direct or indirect, favoring the existence of an *n*-stem **opiōn-*, or even any related form on which an **opiōn-* could have been based. Equally damaging is the testimony of CIL I² 547 OPEINOR, in a 3rd-century BC Praenestine inscription.¹⁰ As seen already by W. Krogmann (1936:127-8), this spelling all but guarantees that the *-i-* of the Class. Lat. form derives from a diphthong. Even though

⁶ In addition to Walde-Hofmann (s.v. *opinor*, with earlier literature): e.g. Leumann 1977:366, with reference to the type O. *leginim* ("Gleiches *-in-* und *-itin-* vermutet man in lat. *opin-āri* und *festin-āre*"), or, more recently, Reicheler-Béguelin 1986:207 ("Le latin, qui a étendu partout le degré *ō* du suffixe, conserve peut-être la trace du degré réduit en *i* dans des verbes comme *opinor* (cf. *opiniō(n)*) et *festinare* (cf. *confestim*)", with a footnote reference to Brugmann).

⁷ MS variants show only forms with *-t-*; with Lindsay's sigla: *praedotiant* Ald., *praedotiunt* ed. princ., *predotiom* W.

⁸ I have addressed this problem in much greater detail elsewhere, with particular reference to *optāre* (1999).

⁹ Pace e.g. Leumann (1977:561, *praed-* as a "Nachbildung" after *prōd-*, itself secondarily formed after *red-*); it would be considerably easier to justify a **praed-eō* or a **praed-igō* (cf. *red-eō*, *red-igō*, *prōd-eō*, *prōd-igō*, and even *anti-d-eō*) rather than a ***praed-opiō*.

¹⁰ On the reading OPEINOR (and not OPEINOD, as still assumed, for example, by Vineis 1993:293), see Wachter 1987:§60a.

monophthongization¹¹ occurred notably early in Praeneste,¹² instances of “reverse” spellings with hypercorrect or archaizing <EI> for etymological *i* are not attested until well into the second century. Thus, under the likely assumption that the contracted *-in-* result of the conjectured **-iin-* (from the alleged **-iōn-* of the oblique *n*-stem alternant in question) would have fallen together with etymological *-in-* (< **-iHn-*), the probability that such a contraction-product would have been spelled <EIN> in 3rd-century Praenestine Latin must be judged to be very low. The etymology of *opināri* remains uncertain, to be sure; but despite the virtual unanimity of the handbook treatments, nothing about the form — and least of all OLat. OPEINOR — actually supports the idea of an original *n*-stem.¹³ Thus *festināre* remains isolated as the sole possible example of the formation in **-iōn-ā-* (> *-in-ā-*) claimed to exist by Schrijver, barring evidence from additional forms in *-ināre/-ināri*.

4. None of the other verbs in *-ināre/-ināri*¹⁴ provides any further support for denominative *n*-stem-based formations of the type claimed to exist in *festināre*. All of the forms in question are very scantily attested, and display interpretive problems of one sort or another.

4.1. Lat. *carīnāre* (or *-āri*?) ‘berate’ is attested in Festus (41.13 L) and several other glosses (see TLL III.458.48ff.), but otherwise only twice in literary texts, both times in the *Annals* of Ennius. Each of these instances, however, appears to present a different scansion (458 *carīnantibus* vs. 576 *carinantēs*). Despite the traditional assumption that the short-vowel variant is basic (thus TLL, Ernout-Meillet, Walde-Hofmann, OLD; recently e.g. Schrijver 1991:429), O. Skutsch has argued (ad locc. [1985:616, 716f.] and 1985:60, 847) in favor of a ba-

¹¹ See the recent discussion by Nussbaum (1994:182ff.).

¹² E.g. CIL I² 560 COFECI (1sg. perf., for expected COFECI), in all probability a late 3rd-century or early 2nd-century text; cf. Nussbaum 1994:184 with n. 83.

¹³ H. Eichner has recently (although in a different connection) made the same point (“Die Schreibung OPEINOR ... zeigt, daß die an sich naheliegende Erklärung als Denominativ zu einem Substantiv **opio*, Gen. **opin-is* ... unzulässig ist”, 1988-90:238n103).

¹⁴ See in general Mignot 1969:312ff., Leumann 1977:551.

sic *carin-*, with secondary shortening in Enn. *Ann.* 458, as in Plt. *coquīnāre* (§1. above). Even if this is so, and under the likely assumption that the derivation is somehow denominative, this totally isolated form offers no testimony whatsoever in favor of an *n*-stem basis **ker-ǵōn-*, as opposed to any other (such as a **carinus* or **carīna*, of the type *coquīnāre* <--- *coquīnus/coquīna*). Nor is such testimony forthcoming from the standard cognates, despite superficial appearances in a few instances.¹⁵

4.2. A verb *bovināri* (and once *bovināre*) is attested in glosses only,¹⁶ with meanings somewhat oddly split between 'cry out, revile, brawl' (*clamare, conviciari*) and 'play tricks, ambush' (*tricare, insidiari*). The closest thing to a literary attestation is the agent noun *bovinātor* (Lucil. 417 M), correlated with *triccōsus* 'trickster' (vs. CGL II.31.13 *bovinatores* 'θρομβοποιοί'). As all authorities agree, the etymology, under the circumstances, is quite obscure, although it is hard not to imagine some connection, if only folk-etymological, with an adj. *bovinus* (as such first attested very late, but in principle a form that could have existed in popular speech for some time).¹⁷ There is in any case not the slightest reason to assume a primordial *n*-stem **boviǵōn-* behind *bovināri*.

4.3. In neither of the remaining possible *-inā-* verbs is the quantity of the *-i-* guaranteed (despite confident notations in some handbooks), and the history of these forms is again largely opaque:

¹⁵ Thus, even if Gk. *κάρνη· ζημία* Hsch. is taken, principally because of its zero grade, to derive ultimately from an *n*-stem, this does not match the thematic formations of Slavic (OCS *u-korŭ* 'daring', SCR. *pòkor* 'blame') and Celtic (e.g. OIr. *caire* 'blame'); nor, in any case, would an old **ker-ō(n)/*kṛ-n-* necessarily support a (Lat.) **ker-ǵōn-*. The nasal formant of Latv. *karināt* 'tease, pester' is a productive affix that has nothing to do with nominal derivation, and the *-n-* of Toch. AB *kärn-* 'strike' has too many possible sources to provide any information at all, assuming the etymological connection is correct in the first place.

¹⁶ Full survey in Flobert 1975:188 (deponent), 338 (active).

¹⁷ Descriptively speaking, *bovināri* looks like a blend of *boāre* 'bellow, bawl' and *bovinus* (for the formal alternation, cf. *boārius* and *bovārius* 'relating to cattle').

(i) *mūgīnāri* 'dither, dilly-dally' (Lucil. 1x, Cic. 1x, Gell. 1x, Festus) appears beside an odd variant *mūsīnāri* attributed to Varro (Plin. *Nat.* pr. 18). The usage by Atta (*Com.* 4) has sometimes seemed to authorize a second meaning 'murmur', but Flobert has rightly called this into question.¹⁸ Thus the connection with *mūgīre* 'bellow, roar' often alleged in the handbooks (e.g. Walde-Hofmann, OLD) has very little to recommend it, and the etymological background of the word, particularly in view of the Varronian variant, is completely unknown. Even if, despite (or perhaps, from another point of view, because of) Varro's *mūsīnāri*, one wished to argue in favor of an ultimate connection with *mūgīre*,¹⁹ there is again no basis for an *n*-stem *mūgiōn-*.

(ii) *nātīnāri* is attested as a hapax in Cato, cited by Festus (166.2 L): *natinatio dicebatur negotiatio et natinatores ex eo seditiosa negotia gerentes. M. Cato [hist. 126] "... tumultu Macedoniae, Etruriam, Samnites, Lucanos inter se natinari atque factiones esse"*²⁰ — whence the traditional interpretation 'be busy' or 'be agitated, rebellious', cf. also a gloss *natina* 'discordia' (CGL IV praef. xviii²¹). Some scholars (see Walde-Hofmann s.v.) have favored a connection with Lat. *nātiō* by way of a formation of the type thought to exist in *festināre*, from an original sense 'to form (rebellious) tribes' or the like. But Flobert (1975:94n1) has pointed out that in view of U. *natine*, as well as the presumed original meaning, such a form could just as well be a "sabinisme". In that case, of course, the verb would provide no support whatsoever for the existence of a "primitive Latin" **nātiōn-* behind *nātīnāri* (if

¹⁸ "... le contexte est conjectural et les commentateurs se sont laissés abuser par *mūgīre*" (1975:94).

¹⁹ As Michael Weiss points out to me, this could be supported by invoking similar words that may have sound-symbolic associations, as perhaps with Eng. *bumble* 'bungle, falter', cf. *bumble* 'drone' (although the first *bumble* may rather be a blend of *bungle* and *stumble*; thus AHD³ 253, s.v.). Andrew Dyck (p.c.) observes that in terms of formation, *musinari* would appear to be based on *mussare* 'murmur, mutter', and that if there existed a by-form *muginari* of *mūgīre*, these two similar verbs for producing incoherent noise could have become confused, resulting in the semantic overlap apparently noted by Varro.

²⁰ Otherwise only glosses, in the form *natinare* 'negotiare' or 'negotiari' (CGL IV.367.24, V.544.43, 605.19).

²¹ So-called "asbestos" glosses, on which see further Goetz 1885:324 (326 on *natina*).

these vowel quantities are correct). If, on the other hand, the form is native Latin, then the semantics seem rather to favor a connection (preferred by Flobert and others) with Lat. *nāvus* 'industrious, energetic, busy'. Here we would have a situation reminiscent of that seen with *festināre*: we have an adjectival (in this case substantivized) derivative in *(-tinus/-)tina* beside the verb stem in *-tinari* (i.e., *natina/natinari*, cf. *festinus/festināre*), and no trace of a **natio* 'energy, industriousness' (just as there is no actual **festiō*). We must now return, then, to *festināre* — which has emerged, quite suspiciously, as the solitary relic with any sort of probative value of the alleged *n*-stem derivation in question — in order to consider the possibility of deriving the form without recourse to an "intermediate" *n*-stem **festiō*.

5. In assessing the derivational history of *festināre*, it is immediately clear that the most natural background for such a form would involve a denominative derivation based on an adjective *festinus* 'hasty, speedy', of the standard type *coquināre* <--- *coquinus/-a* etc. (§1.). As already mentioned (§2., ad fin.), an adjective *festinus* actually exists; nevertheless, this derivation has been rejected, apparently for two reasons, although only the first has been noted explicitly. First, whereas *festināre* is first attested in Plautus and Cato, *festinus* is not attested until Sallust, and becomes common only in Imperial times; in view of this apparent chronological obstacle, it has generally been assumed that *festinus* is somehow post-verbal to *festināre*, which in turn therefore seems to require the independent *n*-stem derivation via a **festiōn-*, as already described. Secondly, in the absence of a coherent theory of Latin formations in *-inus*,²² there has been no clear basis for evaluating the relative age and well-formedness of a formation like *festinus* in the first place; lacking such criteria, it becomes easier to dismiss *festinus* as a late creation, even though in principle, an old and well-formed **festino-* could still have served as the basis of *festināre*, no matter how late an actual Lat. *festinus* happens to be attested.

To consider the second of these points first, it must be said that we are now in a much better position to evaluate a formation like *festinus*, thanks to recent work by A. Nussbaum (1996, 1998). In considering the origins of a wide

²² See the variegated list of speculations offered in Leumann 1977:328, with further references.

range of denominative adjectival formations, in Latin and elsewhere, and primarily those built with the suffix **-to-* and displaying so-called “presuffixal lengthening”, Nussbaum has developed an extremely attractive framework according to which many such forms are in origin “possessive instrumentals”: beginning from a substantival instrumental (e.g. a root-noun instr. sg. **X-eh₁* ‘with X’), one then forms an instrumental adj. in **-to-* (**X-eh₁-to-* > Lat. *X-ētus*: e.g. substantivized *rubēta* ‘(type of reddish) toad’ < **h₁rudh^h-eh₁* ‘with redness’), and similarly with other stem-classes (o-stem instr. **X-o-h₁* > **X-oh₁-to-*, Lat. *-ōtus* [*aegrōtus* ‘sick’, cf. *aegrum* ‘distress’]; i-stem instr. **X-i-h₁* > **X-ih₁-to-* [*crinitus* ‘(long-)haired’, cf. *crinēs* ‘locks’; etc.). The entire process, moreover, is merely a subtype of a derivational pattern involving the agglutination of adjectival formants like **-to-* with inflected case-forms, as in the genitival type *avitus* ‘of one’s *avus*, ancestral’ (i.e. gen. *avi* + *-to-*, producing an adjective that functions like an adnominal genitive). Nussbaum makes the further suggestion²³ that the same process no doubt appears with other formants, of which **-no-* would be a particularly likely candidate: he adduces genitival examples of the type Lat. *equinus* (cf. *equi* ‘of a horse’),²⁴ and instrumental examples of the type Gk. *ἐχίνοϛ* ‘hedgohog’ < **having snakes*’ (cf. *ἐχίς* ‘snake’). I suggest, then, that according to this framework, an instrumental **b^hris-ti-h₁* ‘with haste’, built on the very *ti*-stem **festi-* ‘haste’ attested in Lat. *cōnfestim*, could thus serve as the basis for a well-formed Latin adj. **festino-*; and that this form in turn is the direct source of Lat. *festināre*. It remains to reconsider, in that case, the allegedly late and secondary status of Lat. *festinus* itself.

In his notice of forms in *-inus* back-formed to verbs in *-ināre/-ī*, Leumann (1977:327) cites *divinus* in the sense ‘Wahrsager’ (Cic., cf. *divināre* ‘predict’, Plt.+), *inopinus* ‘unexpected’ (also *necopinus* ‘id.’), and *festinus*. The first example is not strictly comparable either to *festinus* or to *inopinus*: the new form ends up as an agent noun, and the process cannot in any event be separated from the adjective *divinus*, which already existed in similar meanings (‘divinely inspired, prophetic’, Plt.+). Comparison between *festinus* and *inopinus*, however, is instructive. As Leumann makes clear, *inopinus* is post-

²³ 1996 [handout]:§3.2., 1998 [handout]:§2.2.1.5., 2.2.2.1.ff.

²⁴ Productive in Latin: *divinus* (*divi* ‘of a god’), *vicinus* (*vici* ‘of the neighborhood’), etc.

verbal not to *opinor* directly (Latin has no such regular derivational process), but to the participial form *inopinātus*, and the same derivation applies to *necopinus* vis-à-vis *necopinātus*.²⁵ In addition to the suggestive specificity of the negative prefix,²⁶ the textual attestations of these forms render the derivational patterns tolerably clear: thus *inopinus* is first attested in Virgil, as opposed to the better-attested and earlier-attested *inopinātus* (Cic., cf. TLL VII.1749.17ff., 1751.38ff.); and similarly for *necopinus* (mainly Augustan and Silver Latin poetry) vs. *necopinātus* (Cic.; cf. OLD s.vv.). The situation with *festinus* and *festinātus* is not nearly so clear, and is in certain key respects quite different. To begin with, *festinus* is significantly better-attested than *festinātus* (see TLL VI.620.73ff., 621.30ff.). Moreover, *festinus* (Sall., Virg., Ov.) is actually attested earlier than *festinātus*, which does not seem to occur before the elder Pliny, and which attains some degree of frequency only in the latter part of the first century AD. Indeed, the use of *festinus* in Sallust, in Augustan epic, and in Apuleius (where the word is extremely frequent) could in principle point to a lexical archaism. In terms of semantics, finally, it is conspicuous that in addition to plain attributive usage ('quick, rapid') with nouns, common for both *festinus* and *festinātus*, the well-attested quasi-adverbial use of *festinus*²⁷ is not matched by *festinātus*, except for the marked adverbial form *festinātō* (which again does not occur before the elder Pliny). Thus, in view of the possibility that *festinus* may be a perfectly well-formed and potentially old *-inus* formation of the instrumental type, and despite the chronological distance between the first attestations of *festināre* and *festinus*, there does not seem to be any great obstacle to the assumption that *festinus* is actually the direct source of the simple denominative *festināre*.²⁸

²⁵ Similarly e.g. Walde-Hofmann (s.v. *opinor*, ad fin.), cf. also Osthoff 1895:292 (following F. Skutsch).

²⁶ An uncompounded *opinus* 'supposed, conjectural' is all but unattested (OLD cites only Val. Flacc. 6.548).

²⁷ E.g. Virg. A. 488-9 ... *noctes festina diesque / urgebam*, and frequent in Apuleius.

²⁸ Again (§5., first paragraph, ad fin.), even if one chooses in the end to view Lat. *festinus* itself as actually post-verbal to *festināre*, the verb may still be derived from an earlier well-formed

Note further that *nātināri* (assuming vowel length as notated, cf. §4.3.ii) could in principle have the same sort of explanation. Accepting the likely connection with *nāvus*, and with the conventional assumption that *nāvus* continues (*g*)*nāvus* and belongs with the root of (*g*)*nōscō* (thus recently Schrijver 1991:298), one could begin with a well-formed *ti*-stem **ǵnh₃-ti-* > Lat. **(g)nāti-*, thus providing, incidentally, an indirect trace of the phonologically expected cognate matching Gk. γῶσις ‘knowledge’ and the **jātf-* underlying RV *jñātf-* ‘blood relative’ (vs. Lat. *nōtiō*, with secondary full grade, as in *nōscō*). However it came about that *nāvus* ended up with its meaning ‘energetic, industrious, busy’ (as opposed to ‘knowledgeable’ or the like), it would be reasonable to suppose that this **nāti-*, which had the same vocalism, likewise meant something like ‘busy-ness, energy, fuss’.²⁹ The noun **nāti-* could then have served as the basis for an instrumental adjective **nātino-* (‘with energy’ > ‘taking/making trouble, fussy’), which might even survive, in substantivized form (cf. *coquina*, §1.), in the gloss *natina* ‘discordia’ (perh. = ‘troublemaking’). The adj. **nātino-* (or its substantivized variant) then serves as the basis for the denominative *nātināri* (both ‘be busy, take the trouble to do something’ and ‘be a busybody/instigator, make trouble’), if this is indeed the correct representation of the vowel length, and with etymological assumptions as indicated above.³⁰

6. It is legitimate to wonder, in conclusion, how long paradigms like **legiō*/**legiōn-*, **festiō*/**festiōn-* might actually have survived in Latin. It is possi-

**festino-*, itself eclipsed by the plethora of other Latin adjectives with similar meaning (e.g. *alacer*, *rapidus*, *celer*, *māturus*, *praeceps*, *properus*, *vēlōx*).

²⁹ The original root meaning survives in only a single (*g*)*nā-* form, i.e. *ignārus* ‘ignorant, unaware’.

³⁰ Michael Weiss points out to me that an alternative etymology could be based on a comparison with OIr. *do·gní* ‘makes, does’ (OW *gnim* ‘labor, toil’). If, as generally assumed, this ultimately belongs with **ǵnh₃-* ‘beget’, the derivational process would be the same, beginning instead from a *ti*-stem **ǵnh₃-ti-* ‘birth’ > **(g)nāti-* ‘production, effort’ vel sim. (the set ancestor, as it were, of secondarily anī *genti-* [n. 3 above], replaced in the original meaning also by the extended *tiōn*-stem *nātiō*).

ble, for example, that *homō/homin-* 'person' might continue an original alternation **homō/*homōn-* (cf. dimin. *homunculus*), which would have provided at least some minimal support for the type **legiō/*legiōn-*. But surely by the stage of vowel-weakening and contraction, whence **legiō/*legin-* and **festiō/*festin-*, all such support would have dropped away, leaving forms like **legiō/*legin-* entirely *hors système*: no comparable alternation is to be found in any Latin *n*-stem, much less animate *n*-stems, where the prominent subtype derived via the "Hoffmann-suffix" (*Nāsō/Nāsōnis* etc.) involves what appears, descriptively, to be a generalization of the long vowel of the nominative. There is thus very little reason to expect that alternations like **legiō/*legin-* would have survived long enough to yield an archaic class of denominatives based on the weak stem (as opposed to the type *cōntiōnāri* etc., §2. above). If, then, alternations like **legiō/*legiōn-* actually existed in some early stage of Latin (which is indeed a possibility), a denominative **festiōnā(ie/o-)* would need to have been formed exceedingly early (i.e. before the stage of vowel-weakening), would need to have been formed on the basis of a **festiō* that is no longer attested, and would appear to be the only surviving item of this type. But the above analysis of *festināre*, together with the lack of evidence for *n*-stem-based denominatives of this sort provided by similar verbs, suggests that — despite the handbooks — there may be no trace of such denominative **-iōnā(ie/o-)* forms in Latin at all. Instead, *festinus* (or a similarly-formed predecessor) may provide a valuable new element in the derivational complex recently elucidated by Nussbaum (i.e. a "de-instrumental" Latin adj. in *-ino-*, beside the otherwise well-attested "de-genitival" type in *-ino-*), with the result that *festināre* (and all other such forms in Latin) can be taken as having been formed according to the ordinary denominative pattern of *coquināre* <— *coquinus* etc. (§1.).³¹

³¹ Earlier versions of this paper were presented at the 17th East Coast Indo-European Conference (University of North Carolina, Chapel Hill; May 28th-31st, 1998) and at the Colloquium on Latin Linguistics (Princeton University; April 16, 1999); I am extremely grateful to the participants of these events for their helpful comments and suggestions, in particular Alan Nussbaum (ECIEC 17) and Michael Weiss (ECIEC 17 and Princeton Colloquium). For comments on earlier drafts of the manuscript, I am pleased to express my gratitude to my colleague Andrew Dyck, and most especially to Peter Schrijver, who very kindly provided incisive and

References

- AHD³: *The American Heritage Dictionary of the English Language*³
(Boston/New York, 1993).
- Eichner, H. 1988-90. "Reklameiamben aus Roms Königszeit". *Spr.* 34.207-238.
- Ernout-Meillet: A. E. and A. M., *Dictionnaire étymologique de la langue latine: Histoire des mots*⁴ (1959, repr. 1985), Paris.
- Flobert, L. 1975. *Les verbes déponents latins des origines à Charlemagne*. Paris.
- Goetz, G. 1885. "Glossographische Kleinigkeiten". *RhM* 40 (n.s.) 324-328.
- Ivanov, V. 1997. "Luwian collective and non-collective neutral nouns in -ar", in *Indo-European, Nostratic, and Beyond: Festschrift for Vitalij V. Shevoroshkin* (ed. I. Hegedűs, P. Michalove and A. Manaster Ramer), 155-167. Washington: Institute for the Study of Man (JIES Monograph No. 22).
- Jasanoff, J. 1978. *Stative and Middle in Indo-European*. Innsbruck: IBS.
- Krogmann, W. 1936. "Alat. einom". *KZ* 63.123-132.
- Leumann, M. 1977. *Lateinische Laut- und Formenlehre*². Munich.
- Livingston, I. 1997. *A Linguistic Commentary on Livius Andronicus*. Ph.D. dissertation, Cornell University.
- Mignot, X. 1969. *Les verbes dénommatifs du latin*. Paris.
- Nussbaum, A. 1994. "Five Latin verbs from a root *leik-". *HSCP* 96.161-190.
- . 1996. "Latin *acētum*, *acūtus*, *auritus*, *avitus*: four of a kind?" Paper presented at the 15th East Coast Indo-European Conference (Yale University).
- . 1998. "More on 'decasuative' nominal stems in IE". Paper presented at the 17th East Coast Indo-European Conference (University of North Carolina, Chapel Hill).
- Osthoff, H. 1895. "Griechische und lateinische Wortdeutungen, 3. *festnāre*, *cōnfestim*; air. *bras*, cymr. *brys*". *IF* 5.291-293.

helpful reactions (July 28, 1998, per litt. electron.), and whose own work served as the impetus and inspiration for this paper. None of the aforementioned scholars necessarily agrees with the argumentation and conclusions presented above.

- Petersmann, H. 1977. "Vom Altlatein zum Romanischen: eine lexikalische Studie zu zwei Slang-Ausdrücken bei Plautus", in *Latinität und alte Kirche: Festschrift für Rudolf Hanslik zum 70. Geburtstag* (ed. H. Bannert and J. Divjak), 205-214. Hermann Böhlaus Nachf.: Wien-Köln-Graz [Wiener Studien, Ztschr. f. klass. Phil. u. Patristik, Beiheft 8].
- Reichler-Béguelin, M.-J. 1986. *Les noms latins du type mēns: Étude morphologique*. Brussels.
- Rix, H. 1995. "Einige lateinische Präsensstammbildungen zu Set-Würzeln", in W. Smoczyński (ed.), *Kuryłowicz Memorial Volume, Part One* (Cracow), 399-408.
- Schrijver, P. 1995. "Latin *festināre*, Welsh *brys*". *MSS* 51.243-247.
- , 1991. *The Reflexes of the Proto-Indo-European Laryngeals in Latin*. Amsterdam/Atlanta.
- Skutsch, O. 1985. *The Annals of Quintus Ennius*. Oxford.
- Thurneysen, R. 1879/1991. *Über Herkunft und Bildung der lateinischen Verba auf -io der dritten und vierten Conjugation und über ihr gegenseitiges Verhältniss* [repr. in *Gesammelte Schriften* 1.101-167].
- Tremblay, X. 1996. "Zum suffixalen Ablaut o/e in der athematischen Deklination des Indogermanischen". *Spr.* 38.31-70.
- Vine, B. 1999. "Latin **opiō* and **optāre*". To appear in a Festschrift.
- Vineis, E. 1993. "Latino", in A. Ramat and P. Ramat (eds.), *Le lingue indoeuropee* (Bologna), 289-348.
- Wachter, R. 1987. *Altlateinische Inschriften*. Bern/Frankfurt am Main/New York/Paris.
- Walde-Hofmann: A. W. and J. B. H., *Lateinisches etymologisches Wörterbuch* (1938-1954), Heidelberg.
- Watkins, C. 1987/1994. "Two Anatolian forms: Palaic *aškummāwa-*, Cuneiform Luvian *wa-a-ar-ša*", in *Festschrift for Henry Hoenigswald on the Occasion of his 70th Birthday* (ed. G. Cardona and N. Zide; Tübingen), 399-404 [repr. in *Selected Writings* 1.309-314].
- Weiss, M. 1993. *Studies in Italic Nominal Morphology*. Ph.D. dissertation, Cornell University.
- , 1996. review of A. Sihler, *New Comparative Grammar of Greek and Latin*. *AJP* 117.670-675.

**Word Order Change in Umbrian:
From Prepositions to Postpositions**

Christopher Wilhelm

One of the more striking syntactic features of the Umbrian language, especially as compared with Latin, is its adpositional system. Whereas nearly all Latin adpositions are preposed, Umbrian features a handful of frequently-used postpositions along with a larger number of prepositions. Most of these postpositions, moreover, are cognate with such Latin prepositions as *in*, *cum*, *ad*, and *prō*. The question of how these segments came to appear on opposite sides of their attendant phrases in the two related languages is a striking one for the investigator of historical syntax.

Indeed, the postpositions corresponding to these Latin words, *-en*, *-com*, *-aŕ*, and *-per'*, also have cognates in Umbrian's more closely-related sister language, Oscan. Three of the Oscan adpositions, *com* ('at, by, with' in Umbrian), *az*, and *pru*, are, as in Latin, preposed, while *-en* is usually postposed. And the situation within Umbrian itself, as briefly described, is quite anomalous both among the Indo-European languages and in terms of general language typology. One normally expects to find a clear predilection either for prepositions, as in Latin, Greek, or the Germanic languages, or postpositions, as in Hittite or Classical Sanskrit. However, disagreement exists among some scholars as to whether Umbrian should be classified as a prepositional or a postpositional language.

On the strength of the aforementioned prominent and heavily-employed postpositions, linguistic studies have tended to classify Umbrian as postpositional in this area of syntax. P. Baldi, in his general survey of the Indo-European languages, notes as Umbrian's only significant syntactic difference with its fellow Italic languages that it "has postpositions instead of the propositions commonly found in Latin and Oscan"

¹Glosses for Umbrian words cognate with Latin will only be given where the meaning is believed to be different from the Latin cognate.

(1983:32). B. Konneker, in her dissertation on Umbrian syntax, mentions the predominance of postpositions (44, 92, 111), although she does also note the presence of prepositions.

A. Nocentini, however, after alluding to “la convinzione unanimemente espressa che l’umbro... sia una lingua posposizionale” (1992:200), stresses that, aside from the four postpositions introduced thus far and a few others, *-to* ‘from’ being the most prominent, the majority of adpositional lexemes are preposed. Among these prepositions are *com*, with its more familiar comitative sense; *e(he)* = Latin *ex*; *hutra/hondra* = *infra*; *pert* ‘beyond, on the other side of’; *pūs/post*; *pustl/postin* ‘at each’; *pre* = Latin *prae*; *subra* (+accusative), *super* (+locative), *superne* (+accusative), all ‘above’; *supu* = Latin *sub*; and *tra/traff/trahaff* = Latin *trans*. Seizing upon this numerical superiority, Nocentini declares, “Di conseguenza la classificazione tipologica dell’umbro come lingua posposizionale non è sostenibile” (224).

Nocentini appears to overstate this case. He downplays the greater frequency of the postpositions by arguing that *-to* and *-en* are morphologized beyond adpositional status (224), but even so postpositions are overwhelmingly easier to find in the Iguvine Tables. The 145 occurrences of *-per* alone dwarf all the attested prepositions combined, totaling approximately fifty². No one preposition appears in more than eleven instances (*pre*). Even allowing for the ritualistic and extremely repetitive nature of the text in question and especially the contexts of such postpositions as *-per*, the postpositions are pressed into service more frequently. J. Poultney lists seventeen different phrase contexts for *-per*, still more than the total appearances of any of the prepositions, as well as nineteen contexts for *-cum*, and forty-six for *-en*. It may therefore clearly be seen that Umbrian’s postpositions, enjoying far heavier usage than the prepositions, represent a much more central part of the language’s vocabulary as expressed in the Iguvine Tables.

²The exact number is difficult to determine due to ambiguous cases such as *sese* and *nesimeī*. The latter occurs twice in VIa.9 and is analyzed as an adverb by both Poultney and C. Buck (1959:144; 1904:136, respectively), but it appears to function as a preposition, taking ablative objects: *nesimeī asa* ‘next to the altar’, *nesimeī uaspersus* ‘next to the seats’. The former is also regarded as an adverb by Buck (212), while Poultney sees it as “probably” a preposition (323). It occurs three times in such phrases as *sese asa* ‘from the altar’ (III.23, IV.15-16). The total number of attested prepositions is therefore forty-six if these items are not to be considered as such, fifty-one if they are.

On such grounds the typological classification of Umbrian as a postpositional language is certainly justified. Nevertheless, it remains true that the prepositions constitute a significant portion of the language's adpositional inventory, and even a minority of such prominence remains typologically most unusual. An accounting for this remarkable state of affairs is indeed of much greater interest than the determination of a typological label.

The explanation proposed for this situation in the present effort is that these postpositions represent relics of an earlier stage in the syntactic development of Umbrian. In essence, the postpositions took on such grammatical roles earlier in the history of the language than did the prepositions. The catalyst for Umbrian's syntactic shift from postpositions to prepositions will be argued to lie in such compound prepositions as *post(i)n*, where the prosodic constraint that a postposition such as **-en* should appear second in its phrase led to a reanalysis of the placement of adpositions. This conclusion may be deduced from an examination of the distribution of adpositions and their attendant phrases in Umbrian.

While on the strength of the numerical accounting described above Umbrian may be described as a postpositional language, it is quite rare to find an adpositional system in which the ostensible minority formation appears in nearly one-sixth of all attested phrases, and with the majority of adpositional lexemes preposed. Such scarcity would certainly indicate the great instability of such an arrangement; if after all it were stable and long-lasting, the comparative linguist would surely find more attested examples of such patterns than is in fact the case. It would likely not endure for an especially long time, and the situation in Umbrian will have developed relatively shortly before the Iguvine Tables were inscribed. The next question, then, is that of which subset of Umbrian's adpositional inventory arose more recently, the postposed items or the preposed ones. In other words, the crucial question is not, as is commonly asked, a synchronic one, in this case which variety of adposition is more basic, but rather a diachronic one, namely that of which variety prevailed earlier in the language's development, and in which direction this development appears headed.

A numerical counting of postpositions and prepositions cannot determine which

formation is the relic and which, the innovation. Less pronounced mixings of types occur in Oscan, as mentioned, and in Latin as well. Latin traces of postposing include adverbs such as *paulis-per* 'for a short time', and in pronominal phrases such as *mēcum* or *nōbīscum* 'with me, with us,' including also the sequence *tedendo* (= *tēd endo* 'toward you') in the extremely archaic Duenos Inscription (C.I.L. 12 4).

Another Italic language, more closely related to Umbrian and Oscan than to Latin, is South Picene, which offers the great advantage to scholarship of attestations dating from the sixth or fifth century BC (A. Marinetti 1985:44), but the great disadvantage of appearing in only a small number of short, not entirely understood inscriptions. In these few, imperfectly understood inscriptions, such attested evidence as may be found appears to indicate a system similar to that of Umbrian. A handful of instances of suffixed **-en* may be found, as in *mefiīn* 'in the middle' (MC 1, AP 3). Inscription CH 1 contains the word *poiouēta*, which Marinetti interprets as including the postposition *-to* also found in Umbrian (112)³. One clear example of a preposition appears in TE 2: *postin viam*, where one thus finds an item known from both Umbrian and Oscan. Despite the greater age of these inscriptions than of the Iguvine Tables, however, they offer no additional insight as to which set of adpositions is more recent in origin.

In evaluating the relative ages of the two sets of Umbrian adpositions, it is useful to recall the processes by which such parts of speech come into being. A great deal of research has been conducted in the past decade on grammaticalization, although broader notions of the concept have long since been under discussion. P. Hopper and H. Traugott, in their extensive treatment of the subject, offer a description of the trajectories followed by morphemes in becoming grammaticalized. Following C. Lehmann (1985:304), they propose as a path along which adpositions commonly develop before possibly becoming further grammaticalized as nominal affixes:

relational noun >

secondary adposition >

³ This interpretation is not universally held. H. Eichner reads the text in question as *poiouēta*, thus ruling out any such postposition (1993:62-3).

primary adposition >
agglutinative case affix >
fusional case affix (Hopper and Traugott (107).

Examples of an entire such path, or cline (Hopper and Traugott 105), are difficult to come by as the complete process takes far more time than the attested history of most languages. However, one fairly complete case presents itself over the long and well-documented history of Persian. In Old Persian, the noun *rādiy* 'goal, purpose' takes on a relational sense ('by way of, by means of') and may function as a secondary postposition, in that it defines "concrete rather than grammatical relationship" (Hopper and Traugott 107), meaning 'on account of, by.' By the time of Middle Persian, the form has been reduced to *rāy* or *rad* and is a primary postposition with a dative or benefactive sense. As Hopper and Traugott note, such adpositions "are easily cliticized" (107), and such clisis is often a prelude to affixation. In Classical Persian, *-ra* is a dative suffix and also occurs with definite direct objects. By Modern Persian, this *-ra* may even mark indefinite direct objects (Hopper and Traugott 158-9; Kahr 1976:132). One may thus observe that, if a lexeme becomes grammaticalized over time, its sense will become less semantic and more grammatical, it will become increasingly unlikely to appear as a separate and distinct word, and due to increasing frequency of use, it will likely undergo even greater phonological attrition than other segments of a given language.

Turning to Umbrian specifically, one may discern between the two sets of adpositions clear differences in degrees of grammaticalization. Some especially clear instances are to be found among the prepositions. As B. Heine, U. Claudi, and F. Hünemeyer emphasize, an extremely natural and common early step in the process of grammaticalization is the transformation of a relational word into an adpositional or directional sense (1991; see especially 123-31). One such item in Umbrian is the preposition *hutra/ honda* 'below.' Cognate with Latin *humus* and *humilis*, its ending betrays its recent development from the comparative in **-tero-* (Poultney 91; Buck 1995:134). Derived from a different comparative stem, **-ero-*, is the complex

super/superne/subra, all with the general meaning 'above' (Poultney 325). Synchronically, they also function as adverbs in some contexts. The sources of *hondra* and *supra* may be traced in further detail, with both reflecting an ablative feminine case ending (*-a* < **-ad*) (Poultney 115, Buck 136). Such etymological transparency further highlights the recent adposing of these prepositions, as they have suffered little phonetic erosion, and their adverbial usage indicates that they were derived from adjectives not long before. Clearly these items are among the most recently derived adpositions in Umbrian.

On the other hand, few of Umbrian's adpositions are as forthcoming about their lexical sources as the words just examined. Most, however, will prove recognizable to anyone familiar with the prepositions and preverbs frequently appearing in Latin. Such doubly-functioning items are extremely pervasive throughout the Indo-European languages, and may with seemingly equal facility be employed as adpositions, preverbs, or in the more archaic languages like Hittite, Vedic, and, to some extent, Homeric Greek, as adverbs. P. Friedrich therefore proposes for them the designation "locative auxiliaries" (1975:34-5). The distribution of these items is fairly homogeneous among the Italic languages, so it may reasonably be supposed that in Proto-Italic the antecedents of Latin *cum*, *ad*, *ex*, *in*, *dē*, and so forth still functioned as these locative auxiliaries and only subsequently were solidified into their roles as adpositions and preverbs. However, there is no need to insist that they were so reanalyzed en masse; rather, some will inevitably have undergone reanalysis earlier than others. Umbrian's shift in adpositional order affords us the opportunity determine a relative chronology for some of these adpositions. It is to be expected that, of the two groups of adpositions, the one derived earlier will have undergone a greater degree of grammaticalization.

One feature that is not a characteristic specifically of grammaticalization but which is frequently associated with the phenomenon due to the intensified usage of grammaticalized segments is accelerated phonological attrition. Unfortunately, because Umbrian as a general system has undergone such widespread attrition, especially word-finally, as a result of the Proto-Italic word-initial accent (Poultney 30; Buck 101), it is

difficult to pinpoint any exceptional degree of phonological loss. Nevertheless, one useful minimal pair appears to present itself. The comitative preposition **kom* 'with' is found in each of the three most prominent Italic languages. In Umbrian, however, this usage is far less common than its postposed allative cognate *co(m)* 'at.' This postposition is attested thirty-one times in the Iguvine Tables; on all but six occasions, final *-m* is lost. This final nasal is lost in none of the five instances of comitative *com*, including one in which it is postposed to a pronoun (*eru-com* 'with him' - VIb.50). On all five occasions, the word immediately following *com* begins with a consonant (*p-* in every case). Phonological erosion is by no means remarkable in Umbrian, but its absence may well be. The continued integrity of preposed *com* may then be regarded as evidence of its more recent derivation.

As mentioned, adpositions are often grammaticalized so that they become clitics, conceived by a speech community as having no more than partial independence of the nouns with which they are associated. Some evidence is found for clisis of prepositions in Umbrian, at least in the native script:

- | | |
|-------------------------------|-------------------------------------|
| 1) <u>Pu</u> veres Treplanes | 'Behind the Trebulan Gate' (Ia.7) |
| 2) <u>Pre</u> veres Tesenakes | 'Before the Tesenacan Gate' (Ia.11) |

However, in the Latin script, such prepositions are written separately:

- | | |
|--------------------------------|-------------------------------------|
| 3) <u>Post</u> verir Treblanir | 'Behind the Trebulan Gate' (VIa.58) |
| 4) <u>Pre</u> verir Tesenocir | 'Before the Tesenan Gate' (VIb.1) |

On the other hand, postpositions are joined to the preceding word in either script:

- | | |
|---------------------------|---------------------------------|
| 5) <u>tutaper</u> Ikuvina | 'for the Iguvine state' (Ia.21) |
| 6) <u>testruku</u> peri | 'at the right foot' (Ia.29) |

⁴ This phenomenon of adpositions occurring on both sides of the noun with different semantic senses has numerous parallels in Estonian, which may therefore prove a fruitful source of typological investigation (see especially Tuldava 1994:315-7).

- 7) *totaper Iouina* 'for the Iguvine state' (VIIa.53)
 8) *uerisco Treblanir* 'at the Trebulan Gate' (VIIa.53)

Further evidence of the clitic status of the postpositions may be found in a prosodic constraint on their placement: with very few exceptions, the postposition must immediately follow the first word in the adpositional phrase. R. von Planta mentions the enclisis of these adposition (1897:411), and Poultney states, "The arrangement of adj. + prepos. + noun, as in L[atin] *magnā cum cūrā*, is fairly common," referring to *-com* and *-per* as prepositions (156). However, von Planta does not specify the unvarying nature of this placement, and Poultney appears to overlook the great frequency of phrases in the pattern of noun + postposition + adjective. The constraint as such is unsurprising when the phrase consists of a single word:

- 9) *akrutu* 'from the field' (Va.9)

Examples 5) - 8) show that this is also the case in a two-word phrase, whether the first word is a noun (5, 7, 8), as in fact often occurs, or an adjective (6). The Iguvine Tables offer no adpositional phrases of four words or longer, but the constraint is present in a three-word phrase:

- 10) *uraku ri esuna* 'regarding that sacred matter' (Va.5)

Example 10) also shows that this second-position rule applies even when the first word is a demonstrative. The only apparent exception is in phrases beginning with a genitive pronoun:

- 11) *erer nomneper* 'for its (m.) name' (VIa.54)
 12) *erer nomneper* 'for its (f.) name' (VIa.54)

One explanation for this exception might be that possessives are somehow conceived as forming a single unit in a manner in which adjectives are not, so that, on an underlying level, the second-position rule for postpositions is not violated. A possible Latin parallel for such an analysis may be found in such compounds as *eiusmodi*, *huiusmodi*, both 'of this kind, such', although this interpretation is complicated by the Umbrian insistence on marking a word separation after *erer* and *erar*.

Further significant evidence for the view that postpositions in Umbrian were regarded by the speech community as being attached unlike prepositions is that the presence of a postposition often blocks phonological rules normally operating at the end of a word. An excellent example is seen in 3) and 4), where final **-s* is rhotacized, in contrast with 8), where it remains unchanged. Similarly, final *-m*, as in the accusative case, is frequently dropped:

- 13) *Esto persclo... enetu* 'He shall begin that sacrifice' (Via.1)

Final *-m* is retained, however, when followed by a postposition:

- 14) *persklumaŕ karitu* 'He shall call to the sacrifice' (III.21)

Similar phenomena do not occur with prepositions:

- 15) *postī acnu* 'in each year' (Vb.8)

Here, one might expect perhaps a **postīŕ acnu*. After all, if the same sort of clisis were occurring among the prepositions as for the postpositions, the final consonant should remain, as it does in 14). Such evidence strongly suggests that the Umbrian postpositions have developed along this grammaticalization cline, as a consequence of their having had more time to do so.

Finally, evidence exists not only in Umbrian but in the other Sabellian languages as

well for the first stirrings at least of the consummate step in the process of grammaticalization: the reanalysis of the cliticized adpositions as grammatical affixes. These cases involve the postposition *-en*; in several noun-adjective pairs, the adposition has been extended to appear on both members of the phrase rather than the first only:

- | | |
|--|--|
| Umbrian: 16) <i>vapef<u>em</u> aveiklu<u>f</u></i> | 'toward the augural seats' (Ib.14) |
| 17) <i>ocre<u>m</u> Fisi<u>m</u></i> | 'on the Fisian mount' (VIa.46) |
| 18) <i>to<u>te</u>m Iouine<u>m</u></i> | 'in the Iguvine state' (VIa.46) |
| . | |
| Oscan: 19) <i>húrtín Kerrífin</i> | 'in the grove of Ceres' (Vetter 147 A.1-2) |

An apparent example is also present in South Picene:

- | | |
|--|--------|
| 20) <i>ombrij<u>en</u> akre<u>n</u></i> | (CH.2) |
| 21) <i>me<u>fi</u>n... vepet<u>i</u></i> | (MC.1) |

Of particular interest is 18). Here, the postposition is so completely regarded as part of the noun that an additional *-en* must once again be postposed to provide a satisfactory locative sense. A similar example occurs earlier in VIa:

- | | |
|--------------------------------|---------------------------------|
| 21) <i>to<u>te</u>m Iouine</i> | 'in the Iguvine state' (VIa.26) |
|--------------------------------|---------------------------------|

It is surely no mere coincidence that this incipient case affix functioning is found in the one adposition to be postposed in both Umbrian and Oscan. The postpositions of Umbrian show a significantly greater degree of grammaticalization than do its prepositions, with their regular rules for enclisis and integration with their associated preceding words. It therefore stands to reason that they have evolved as adpositions over a longer period of time and as such were so analyzed some time earlier than the prepositions were. As for Oscan, comparable evidence is scanty: *com* appears only in

its preposed, comitative manifestation, while *-to* is missing. The adposition cognate with Umbrian *-ař*, *az*, appears once, preposed:

22) *az húrťum*

'to the grove' (Vetter 147 A.20)

On this admittedly slender basis, a relative chronology may be proposed. The first of the attested adpositions to be derived was **-en*, along possibly with **-to*, given Nocentini's observation that "Il suo valore è quello di un caso locale secondario" (218). These items are, as far as can be discerned, suffixed throughout Sabellian, and show far and away the most-developed grammatical usage. Incidentally, *-en* also shows significant phonological attenuation. Subsequently, **ad(s)* was adposed; in the intervening period, word order for new adpositions was reversed in Oscan but not in Umbrian. For allative **kom* there is insufficient evidence to determine whether it was adposed closer in time to **-en* or **ad(s)*. It can however be stipulated that, much as *-e(n)* in 18) and 22) continued as a postposition while beginning to behave as a case affix, **kom* continued for a time to serve as a locative auxiliary, taking on in the meantime a comitative sense; Heine, Claudi, and Hünemeyer argue that the comitative is a more abstract sense than the allative, and therefore reflective of greater grammatical development (159). The preposing in Umbrian of *post*, *pre*, *ehe*, *trař*, and *supu*, along with comitative *com*, indicates that Umbrian eventually followed Oscan in shifting its adpositional pattern after the reanalysis of **ad(s)*. The sequence of events may be summarized as follows:

	Umbrian	Oscan
Stage I	postposing	postposing
	(<i>*-en</i> adposed)	
Stage II	postposing	preposing
	(<i>*ad(s)</i> . allative <i>*kom</i> adposed)	
Stage III	preposing	preposing
	(<i>*posti</i> , <i>*prai</i> , etc. adposed)	

It should be explicitly stated that, at least in attested Umbrian, once a lexeme has been analyzed as an adposition, it manifestly does not shift from one side of its attendant noun phrase to the other. Possible evidence for such an event surfaces in Oscan, where the phrase *en eituas* 'for a fine' appears in the Tabula Bantina (2.9). This document, however, is fairly late and may show no small Latin influence. A. Harris and L. Campbell mention just such a shift in Pashto accomplished via the intermediate step of "circumfixes," in which the adposition is repeated on both sides of the noun (1995:139), but Umbrian offers no trace of such a mechanism. Nevertheless, evidence of a mechanism is present in Umbrian, but of a different sort.

One fully developed explanation for the adpositional alignment found in Umbrian is that of Nocentini. Nocentini ascribes the enclisis described above to the phonological lightness of the lexemes involved, intensified by the Sabellian shift "da un accento melodico... ad un accento ritmico." This shift "ha l'effeto di accrescere il contrasto fra il costituente accentato e l'elemento clítico seguente" (236). Further cementing this positioning is the sentence accent; here, Nocentini draws on the work of L. Dezső (1980), who, he declares,

enuncia un universale in virtù del quale in una lingua SOV [*which, Nocentini and Konneker agree, describes Umbrian*] l'accento di frase cade sul costituente che precede immediatamente il verbo oppure, nel caso che il verbo sia preceduto da un elemento fisso, sul costituente che precede questo elemento, secondi gli schemi $\acute{X}V$ e $\acute{X}YV$, dove \acute{X} è accentato e Y non accentato. (235)

In short, the combination of rhythmic word accent and SOV sentence accent provided a slot into which such phonologically slender adpositions as *-aŕ*, *-co(m)*, and *-pe(r)* could readily fall. On the other hand, prepositions like *pre* and *post* would have been more "pesanti" and would not fit into such a schema, although Nocentini speculates that, with the strong cohesion between adposition and noun, the word-initial accent might have been

retracted to the preposition (237).

Several questions pose themselves in response to this hypothesis. One concerns general typology: instances of accentual considerations affecting adpositional placement are not widely known. A clearly documented parallel would certainly bolster Nocentini's position, but the few scattered Latin relics exemplified by *paulisper* and *mecum* cannot be taken to constitute such a system. As for the word accent, Buck attributes the word-initial stress accent to "the Italic period," but he points out that the accentual status of attested Oscan and Umbrian "cannot be determined" (101), while A. Sihler flatly declares that "Latin is the only [documented] Italic language for which we have information regarding accent" (1995:239). The influence of word accent upon the Umbrian adpositions as we know them cannot be assessed with any certainty. Finally, sentence accent remains an elusive and poorly understood concept even in living languages, let alone a tongue such as Umbrian where no linguistic scholarship or data are offered by anyone who could have heard it spoken. Dezső is careful to point out the the "universal" cited by Nocentini "should only be considered tentative and temporary" (22), and that the accentual rules of individual languages will be complicated by the inevitable mixing of types (23), which is obvious in Umbrian's adpositional inventory. An alternative accounting for these adpositions is proposed here, drawing on the more familiar mechanisms of reanalysis and analogical extension.

A preposition found not only in Umbrian but also in Oscan and South Picene is *postin*. In Umbrian and Oscan at least this word has a distributive sense, 'for each' (Poultney 149) or 'according to' (Buck 206). Poultney and Buck both derive this preposition from **posti* + the postposition **en*. (318, 206 respectively)⁵. Presumably, like most of the less recently derived adpositions in the Italic languages and indeed throughout the Indo-European family, **posti* was one of Friedrich's locative auxiliaries before undergoing adpositional reanalysis. In this instance, however, the lexeme could be modified by the adjunction of **-en*, which, as noted, became adposed extremely early in proto-Sabellian. As a short, phonologically very light segment, **-en* would quite readily

⁵ This **posti*, as A. Ernout (1959:526) points out, "est issu de **pos-ti* (cf. *ante* de **anti*); l'*i* en finale absolue a abouti à *e*." In Latin, this final vowel was then lost by syncope (A. Sihler 1995:68-9), resulting in the familiar preposition *post*.

have lent itself to the clisis common to all postpositions in the Iguvine Tables. Consequently, with **posti* not yet analyzed as an adposition, or not fully so in any event, and **en* already required prosodically to appear second in its phrase, it follows that an expression such as

15) *posti acnu*

'in each year' (Vb.8)

could not be produced with a postposition at this point in the history of the language; a phrase **acnu posti-en* would clearly violate the second-place constraint. Inevitably, as **posti-en* with its sense quite distinct from **posti* alone came to be regarded within the speech community as a single unit, it will have remained preposed while the reason for such a placement grew obscure. Its analysis as a preposition, moreover, would by strong analogy have prompted a similar placement for **posti* alone as well as its antonym, **prai*. Subsequent adposings of locative auxiliaries and other relational words then followed this pattern.

In Oscan, this compound likely had a similarly pivotal role, but the preposing of *az* indicates a slightly different sequence of events for this branch of Sabellian. South Picene simply offers no other prepositions than *postin* with which to test this hypothesis. Somewhat further afield, while Latin offers some traces of such compound locative auxiliary-turned-adpositions, these compounds, such as *insuper* 'above' and *dēsuper* 'from above', tend further to suggest a quite earlier preposing of its core adpositions when contrasted with *postin*. Moreover, apart from the apparent exception of the Duenos Inscription, Latin does not postpose its reflexes of Proto-Italic **en*, suggesting that the explanation for such forms as *paulisper* and *vobiscum* lies elsewhere than the solution proposed here for Umbrian.

Nevertheless, within Umbrian enough material is available to allow a chronological reconstruction of the events leading to its eccentric adpositional patterning. Consistent with the verb-final word order found throughout the Iguvine Tables, the oldest attested Umbrian adpositions are postposed. However, the development of compounds of

locative auxiliaries with postpositions, bound by the prosodic requirement that they appear immediately after the first word in a given phrase, prompted a reanalysis. Thereafter, newly minted adpositions in Umbrian were preposed. Unfortunately, the Iguvine Tables do not span a sufficiently broad period of time to inform us what effects such a development might have had on sentence order as a whole. The brevity and restricted subject matter of the text further limit our understanding of the evolution of Umbrian syntax, along with potential insights into syntactic evolution in general. Such questions would have to be answered through an examination of shifts in the adpositional phrase order of other languages.⁶

*** WORKS CITED ***

- Baldi, Philip. 1983. *An Introduction to the Indo-European Languages*. Carbondale: Southern Illinois University Press.
- Buck, Carl Darling. 1904 (1995 reprint). *A Grammar of Oscan and Umbrian*. New York: Georg Olms Verlag.
- Dezsi, László. 1980. "Grammatical Typology and Protolanguages." *Linguistic Reconstruction and Indo-European Syntax: Proceedings of the Colloquium of the 'Indogermanische Gesellschaft', University of Pavia, 6-7 September 1979*. Paolo Ramat, Onofrio Carruba, Anna Giacalone Ramat, Giorgio Graffi, eds. *Current Issues in Linguistic Theory* 19. Amsterdam: John Benjamins. 17-26.
- Eichner, Heiner. 1993. "1919 oder 1991? Zur Entwicklung der oskisch-umbrischen

⁶ The present effort is the result of research undertaken for a doctoral dissertation on word order change among adpositions and adpositional phrases in the Indo-European languages. In addition to the Italic branch, particular attention will be given to the Anatolian, Baltic, and Celtic languages, although additional data from other languages may also prove to be of interest.

- Studien nebst einer neuen Interpretation des Textes von *Fonte Romitol* (Vetter Nr. 147)." *Oskisch-Umbrisch: Texte und Grammatik. Arbeitstagung der Indogermanischen Gesellschaft und der Società Italiana di Glottologia vom 25. bis 28. September 1991 in Freiburg*. Helmut Rix, ed. Weisbaden: Dr. Ludwig Reichert Verlag. 46-95.
- Ernout, A. 1959. *Dictionnaire Étymologique de la Langue Latine: Histoire des Mots*. Paris: Librairie C. Klincksieck.
- Friedrich, Paul. 1975. *Proto-Indo-European Syntax: The Order of Meaningful Elements*. *Journal of Indo-European Studies*, Monograph Series. No. 1.
- Harris, Alice C. and Lyle Campbell. 1995. *Historical Syntax in Cross-linguistic Perspective*. Cambridge: Cambridge University Press. *Cambridge Studies in Linguistics*, No. 74.
- Heine, Bernd, Ulrike Claudi, and Friederike Hünemeyer. 1991. *Grammaticalization: a conceptual framework*. Chicago: University of Chicago Press.
- Hopper, Paul J. and Elizabeth Closs Traugott. 1993. *Grammaticalization*. Cambridge: Cambridge University Press.
- Kahr, Joan Casper. 1976. "The Renewal of Case Morphology: Sources and Constraints." *Working Papers on Language Universals*. Stanford University. 107-151.
- Konneker, Beverly. 1972. *Studies in Umbrian Syntax*. Dissertation, University of Texas at Austin.

- Lehmann, Christian. 1985. "Grammaticalization: synchronic variation and diachronic change." *Lingue e Stile*, No. 20. 303-18.
- Marinetti, Anna. 1985. *Le Iscrizioni Sudpicene. Lingue e Iscrizioni dell'Italia Antica* a cura di Aldo Prosdocimi, No. 5.
- Nocentini, Alberto. 1992. "Preposizioni e posposizioni in Oscoumbro." *Archivio Glottologico Italiano*. Vol. 77. 196-242.
- Poultney, James Wilson. 1959. *The Bronze Tables of Iguvium. Philological Monographs* published by the American Philological Association, No. 18.
- Sihler, Andrew L. 1995. *New Comparative Grammar of Greek and Latin*. Oxford: Oxford University Press.
- Tuldava, Juhan. 1994. *Estonian Textbook*. Bloomington: Indiana University, Research Institute for Inner Asian Studies.
- Vetter, Emil. 1953. *Handbuch der italischen Dialekte. 1. Bd. Texte mit Erklärung, Glossen, Wörterverzeichnis*. Series: *Indogermanische Bibliothek. Erste Reihe, Lehr- und Handbücher*. Heidelberg: C. Winter.
- von Planta, Robert. 1897 (1973 reprint). *Grammatik der Oskisch-Umbrischen Dialekte. Zweiter Band: Formenlehre, Syntax, Sammlung der Inschriften und Glossen, Anhang, Glossar*. New York: de Gruyter.

Indo-European Syntactic Rules and Gothic Morphology

Vyacheslav V. Ivanov

The present study attempts to view ancient Germanic syntactic structure as it is reflected in Gothic grammatical (i.e. morphological and partly syntactic) patterns. In order to recover the oldest scheme, one may try to compare these Germanic data to patterns of Indo-European syntactic structure as now reconstructed on the basis of Hittite and other Northern and Southern (Luwian) Anatolian languages, Mycenaean and Homeric Greek, Vedic Sanskrit, and other ancient or archaic Indo-European languages.

Let us summarize briefly some of the chief conclusions arrived at in the field of Indo-European syntax, while at the same time recalling the main stages of this research.

The main result was anticipated more than a century ago by Wackernagel, in his law according to which enclitics are put in the second position after the first stressed word in an Indo-European sentence.¹ On the one hand, this law shows the importance of the second position in the sentence, insofar as many key pronominal words² and grammatical particles are placed there.³ On the other hand, initial position in the sentence becomes relevant as well: for instance, the verb may take this position if it is stressed or marked.

Subsequent research (particularly during the past four decades) has shown that in many ancient Indo-European languages, especially those discovered in our century (such as Mycenaean Greek, Hittite, Palaic, Lydian, Luwian-Lycian, the Old Novgorodian dialect of the birch-bark documents)

¹ Wackernagel 1892/1955; Krisch 1990; cf. also Hale 1987; Dunkel 1990, 1992.

² Some of these were studied by Wackernagel much earlier: Wackernagel 1879.

³ Incidentally, this renders artificial a binary scheme that divides the sentence into two phrases only, i.e. a nominal one and a verbal one; the enclitic group often refers to the sentence as a whole, reproducing its main verb-actant structure, or even has a scope broader than a single sentence — on the last point, cf. the remarks of Watkins, 1997, p. 613.

several enclitics may appear in series so as to form an entire chain. It becomes possible to describe such series in terms of a rank-ordered grammar, assigning each element a numerical code according to its place in the chain.⁴

Several important hypotheses have been based on a comparison between the initial elements of the Hittite sentence that introduce such chains and the deictic pronouns and conjunctions or preverbs found in the other Indo-European dialects. In 1939, Sturtevant noted the resemblance of the Old Hittite introductory conjunctions *šu* and *ta* and the deictic pronouns **so-* and **to-*, suggesting that original conglomerates of particles were fused together to give rise to later personal pronouns of the third person, and connecting this to "the tendency of the IE pronoun to stand at the head of its clause and to function as a sentence connective in early Skt., Gk., and Gmc."⁵ In connection to **to-*, this idea can be supported by data from other languages such as Slavic, and may be considered to have been proven.⁶ A similar comparison was made simultaneously half a century ago in 1947, by Miles Dillon and Ferdinand Sommer (working independently of each other).⁷ They discovered the genetic identity of the Hittite group consisting of an introductory element like *nu-* and a following enclitic chain of particles (including pronominal words) and corresponding Old Irish complexes consisting of a preverb (or some other element) like *no-* and a following enclitic morph (usually pronominal). This discovery was further discussed at the VIIIth International Congress of Linguists in Oslo in 1957, by both Calvert Watkins and myself.

⁴ For descriptions of the Hittite rankings of enclitics, see: Hoffner 1973; Watkins 1997, p. 617; Melchert 1994a; cf. Dunkel 1992, pp. 164-165. A brilliant formal scheme for Old Russian has recently been suggested by Zaliznjak 1986, pp. 155-158; 1993, pp. 280-308; 1995, pp. 167-171. By comparing these formal descriptions one may find interesting correspondences, for instance, the tendency to place pronominal enclitics closer to the end of the group, and the similar positioning of the particle **-t(e)i* > Hittite *z(a)*, Old Russian *-ti* (but see Watkins, *ib.*, on a difference as compared with Luwian).

⁵ Sturtevant 1942, p. 26, §18a; 1939; 1952; Sturtevant and Hahn 1951.

⁶ On the exact correspondence between Old Hittite and Slavic see: Ivanov 1965, pp. 187-190; Ivanov 1979, p. 75; Gamkrelidze, Ivanov 1995, pp. 313-314.

⁷ Dillon 1947; Sommer 1947, p. 70. Cf. Mc Cone 1979.

We both developed this model in later works, arriving at the following formula for Indo-European sentence structure:

$$I + E_1 (+ E_2 + \dots + E_n) + \dots + V^f$$

where *I* is an introducing element (such as a conjunction, a preverb or a relational noun that has become a preverb), *E_x* is an enclitic element ($n \leq 6^8$ in Hittite and some other languages), and *V^f* is a finite verbal form.⁹ (It can also be shown that in the emphatic pattern, the position of the verb is inverted and it may therefore become a realization of *I*, with the final position assigned to another grammatical element.) Traces of this structure have been found not only in Hittite (and all the other Northern and Southern Anatolian languages) and Celtic, but also in Vedic, in archaic (i.e. Mycenaean and Homeric) Greek, in Tocharian verbal constructions with pronominal enclitics, in Old Lithuanian reflexive forms and pronominal adjectives, and in Slavic enclitic complexes.¹⁰ Accentological studies have shown that in Indo-European (as also later in Slavic according to Vasiljev-Dolobko's law, and in some cases also in Greek), enclitic elements may have become proclitics as well.¹¹ More specifically, it has been shown that the syntactic connectives **yo-* and **k^w(e/o)-i-* play a special role in such enclitic complexes. Among later works on the subject, note in particular Josephson's contributions, demonstrating the functional equivalence of the Hittite enclitic particle *-kan* and the Gothic preverb *ga-*.¹²

⁸ It seems possible to see here an intriguing numerical coincidence with Yngve's model presupposing a syntactic role of the "magical number 7" (± 2), which, according to experimental psychology, determines certain limitations on short-term memory.

⁹ Watkins 1962; 1964; Ivanov 1965, pp. 185-265.

¹⁰ Ivanov 1958; 1959, pp. 33-34; 1965; Gamkrelidze, Ivanov 1995, pp. 313-321.

¹¹ For Greek, see Bally 1945/1997, p. 113-114, §229. The problem of enclitics that are proclitics in Indo-European has been studied recently by Jucquois; corresponding Slavic facts have been discussed in a number of accentological works by Dybo.

¹² Josephson 1972; 1976; 1995; 1997.

The present study constitutes an attempt to understand Proto-Germanic syntax in the light of these new concepts.¹³ The border between syntax and morphology in archaic Germanic verbal structures has not been stable (compare the use of preverbs or preposition-like adverbs in Modern German and Modern English). Thus it becomes possible to deduce probable Proto-Germanic syntactic structures from what has in part become a set of morphological patterns in the Gothic verb. Synchronic rules describing the behavior and function of some Gothic verbal constructions may lead to the reconstruction of diachronic developments of ancient Indo-European syntactic rules. The claim is that these IE syntactic patterns were reproduced in the sequencing of morphs in Proto-Germanic and later in Gothic.

There are two specific problems connected to particular features of the Gothic texts. First, almost all of them are translations from Greek. Since the latter has also preserved various old Indo-European enclitics as well as rules governing their order, there is the possibility of some influence from the Greek original, although in the language of the New Testament the ancient patterns of IE syntax have been transformed under pressure from the hypothetical Aramaic prototype of the text, and also for purely chronological reasons having to do with the development of post-Classical Greek. If some turns of phrase in the Gothic translation reproduce Greek enclitic complexes, one may suppose that Greek played the role of a catalyzing influence (a factor that might explain some differences between Gothic patterns and those of the other ancient Germanic languages). But such patterns are mostly found in strictly syntactic enclitics,¹⁴ whereas the most characteristic Gothic structures are formally divergent from Greek, as they concern verbal (and partly pronominal) morphology.¹⁵ Another question that arises from the translational nature of the texts concerns their bookish character. We know very little about conversational Gothic, only a few such phrases having been discov-

¹³ For some preliminary remarks on Gothic cf. Ivanov 1965, pp. 251-252, fn. 238-239.

¹⁴ Klein's studies have revealed a complicated picture of the relationship between Gothic complexes with -uh and corresponding elements in Greek: Klein 1994; Klein, Condon 1993.

¹⁵ This general problem is discussed in connection to prepositional phrases in Klein 1992 (with further literature).

ered. Still, bearing in mind all of the differences between oral and written forms of language, one may hope that certain features of oral language have been reproduced in some parts of the texts, as for instance in the translations of Jesus' direct speech.¹⁶

A specific phonemic feature is helpful in identifying certain Gothic enclitic complexes purely from the point of view of their sound structure: several types of internal sandhi changes are found mostly at the boundaries of elements belonging to a group of former clitics.

The initial Indo-European chain of enclitic/proclitic particles is reflected in the beginning of such Gothic complexes as: (1) ga-u-laubjats "do both of you (2 P. Dual.) believe" = πιστεύετε (Mt. IX.28, in the beginning of an interrogative sentence), cf. þu ga-u-laubeis du sunau gudis? "do you (2 P. Sg.) believe in the Son of Man (=God)" = σὺ πιστεύεις εἰς τὸν υἱὸν τοῦ θεοῦ, J. IX.35); (2) ga-u-iva-selvi "Do you see anything?" = εἴ τι βλέπεις (Mk. VIII.23, an entire sentence consisting of a single Gothic prefixed verbal form corresponding to three Greek words); (3) ga-þau-laubidedeiþ mis "you would believe me" = ἐπιστεύετε ἂν ἐμοί (J. V.46); (4) ga-þ[=(u)hl-þan-miþ-sandidedum "we are (?) sending along with (him)" = συνεπέμψαμεν δὲ¹⁷ μετ' (2 C. VIII.18); (5) diz-uh-þan-sat "seized" = εἰλθεν "possessed", Moulton 1978, p. 180 (Mk. XVI.8); (6) ni-u [negative plus interrogative particle; in confirmation questions, expects a positive answer — English *isn't it so that*, French *n'est-ce pas*, German *nicht wahr*]¹⁸ (= οὐχ, Mt. VI.26, = οὐκ, J. XI.40, in the beginning of a sentence); þau ni-u wituþ "Do you not know" = Ἡ ἀγνοεῖτε, R. VII.1, at the beginning of a new chapter (with the Gothic structured in a completely different way as compared with the Greek original, where the privative preverb is attached to the verbal stem and fused with its root); þau[h] ni-u kunnuþ "do you not re-

¹⁶ From this point of view, important findings have emerged from the preliminary study of Gothic discourse in terms of the means of combining sentences and other types of narrative organization, as found in Klein 1994; Klein, Condon 1993.

¹⁷ Klein (1994, p. 255, table 1, III; p. 263, fn. 17; pp. 273-274) has found that a translational relationship between δὲ and -uh þan is seen in 97 of 123 occurrences of -uh þan (= 0.78) in the Gospels.

¹⁸ Lehmann 1986, p. 265, N 18.

alize" = ἢ οὐκ ἐπιγνώσκετε, 2 C. XIII.5, at the beginning of a sentence); (7) ni-(u)h "and not" = Greek οὐδέ (J. XV.4; Gal. II.3); (8) ni-pf=(u)hl-pan + nauh-pan-uh qam Jesus in weihsa "now Jesus had not yet entered the village"¹⁹ = οὐπω δὲ ἐληλύθει ὁ Ἰησοῦς εἰς τὴν κώμην (J. XI.30, at the beginning of a sentence);²⁰ (9) ni-pf=(u)hl-pat-ei sijaina fraiw Abrahamis, allai barna "Nor because they are his descendants are they all Abraham's children" = οὐδ' ὅτι εἰσὶν σπέρμα Ἀβραάμ, πάντες τέκνα (R. IX.7; beginning of the sentence); (10) ni-sf=(u)h]-sijai "may this never be" = μὴ γένοιτο (L. XX.16); this is a separate sentence in which the final verbal form seems to be unstressed (as was normal for Germanic and Indo-European) and which enters the enclitic group, since there are no other words between the final verb and the initial group; (11) (iþ Iesus) uz-uh-hof augona iup "(and then Jesus) looked up = raised his eyes" = (ὁ δὲ Ἰησοῦς) ᾤρεν τοὺς ὀφθαλμοὺς ἑαυτοῦ (J. XI.41,²¹ after us-hofun "they took away" = ἦραν in the preceding sentence); (12) us-nu-gibiþ "then give" = ἀποδοτε (L. XX.25, beginning of direct speech); (13) uz-uh himina was þau uz-uh mannam "was it from heaven or from men" = ἐξ οὐρανοῦ ἢ ἐξ ἀνθρώπων (Mk. XI.30, a prepositional nominal phrase²² structurally similar to verbal complexes, cf. also uz-u waurstwam witodis "whether by observing the law" = ἐξ ἔργων νόμου (Gal. III.2), with a completely different type of interrogative structure in Greek; to uz-u compare also the similar structure in ab-u < preposition af/b- + u, J. XVIII.34); (14) ub-uh-wopida "he called out" = καὶ ἐβόησεν (L. XVIII.38, at the beginning of a sentence; the structure is quite different from the Greek original; cf. jah uf-wopida "and she exclaimed" = καὶ ἀνεφώνησεν, L. I.42; uf-wopida = ἀνεβόησεν, L. IX.38).

It is possible to describe such Gothic complexes in terms of rank grammar. In complexes with a single preverb, the first rank is assigned to the pre-

¹⁹ See on this sentence Klein, Condon 1993, p. 29.

²⁰ On the function of -uh þan in such sentences where it refers to background information, cf. Klein 1994, pp. 262-273. On the sentential value of nih þan in L. IX.3 see ib., p. 270. On þan-uh see ib., pp. 258-262.

²¹ See on this sentence Klein, Condon 1993, p. 13.

²² Cf. Klein, Condon 1993, p. 9 a. o.

verbs *ga-* (1-4 above)/*diz-* (5 above)/*us-* (11-13 above)/*uf-* (14 above) and the sentence negative *ni-* (6-10 above).

Etymologically, *ga-* is identical to the archaic Latin *com-/gon-* < **kom* that is very often met with in a similar function, i.e. as a perfectivizing preverb in verbal constructions, as in such archaic texts as the inscription of the collegium of Faliscan cooks (CIL I² 364). The initial pretonic position accounts for the voicing of the initial **k*- > Gmc *g-/γ-* according to Verner's law (the low tone reconstructed for the IE enclitics/proclitics may be connected to voicedness, according to a general phonetic principle). Initial position is also characteristic for the corresponding element in Celtic, i.e. Old Irish *con-* corresponding to Latin *c/gom-*; the same feature may also be reconstructed on the basis of archaic prepositional phrases with the preposition *kün/kü*²³ in Proto-Slavic. In partly comparable verbal constructions a similar word order is found in some later dialects of Northern Anatolian, as with Lydian *kan-tro*.²⁴ But in Hittite, as in Vedic, the position of this perfectivizing particle in an enclitic chain is always final: Hittite *nu-kan* = Vedic *nú-kam*, cf. Greek *vú kev*,²⁵ Old Hittite *šu-kan* = Vedic *sú-kam*. Hittite has the element *kan* between

²³ On the prepositional phrases that preserve the final vowel (Russian *k nemu* "to him" < **kün jemu*) cf. Hill 1977.

²⁴ Melchert 1994, p. 340, with references.

²⁵ The comparison was suggested already by Wackernagel, Debrunner 1930, p. 568; on the history of the problem and on difficulties caused by discrepancies between dialects see: Watkins 1997, pp. 618-619; Dunkel 1990, p. 115 ff.; cf. also the remark by Hrozný 1916, p. 32: "Das *kán* ... möchte ich mit ai. *kám*, *kam*, gr. *kev* ... zusammenstellen". On the final position (or postposition) of *kam* in Vedic see: Delbrück 1888, pp. 146, 150; Macdonell 1972, p. 31; Dunkel 1990, pp. 117-120; on *sú* see Klein 1982. Vedic combinations follow another unstressed word: *Víṣṇor nú kam vírfāṇi prá vocam* "I will now proclaim the heroic powers (feats) of Vishnu" (RV I.154.1a — a line with an archaic anagrammatic reproduction of the initial *v[i]-* of Vishnu's name, Elizarenkova 1989, p. 638). The place of *nu* in the Vedic sentence is always second comparable to that in Greek and also in Germanic (see on Gothic *nu* below). But this addition to the Indo-European pattern so strictly preserved in Hittite might have been caused by a later development, see some examples of the apparent rearrangement of the particles *kev* and *áv* in Greek, as studied by C. J. Ruijgh. A completely untenable position seems to be that held by George Dunkel,

a preceding noun in the Dative-Locative case and a following postposition *anda*: {N_{DAT-LOC} + *kan* + *anda*}, cf. the Vedic construction of a noun in the Dative with a postposed tonic *kám*. To the latter one can compare the final position of Latin *-cum* in the archaic prepositional constructions *me-cum* "with me", *te-cum* "with you" and Umbrian *vuku-cum* "at the grove (Abl.)".²⁶ The latter cases show an inverted word order in comparison to nearly synonymous Slavic constructions like Russian *k rošče* "to the grove". It can be suggested that the Indo-European particle/adverbial element **kom* could be used both as an enclitic or as a proclitic. Each of the dialects or dialectal groups developed either predominantly enclitic final position of this morph in a chain of particles, as in Hittite, or an initial one as in Gothic. But despite such differences in the order of elements, it is possible to reconstruct an Indo-European prototype such as **kom* + (... +) **sok^w*- "to see (perfective aspect)" for a combination like Gothic *ga-sailvan* "seen" (*ga-sailvanane*, 2 C. IV.18 = βλεπόμενα) = Hittite *-kan* + (*katta*) *šakuwai-*, in an archaic Middle Hittite poetic text: *nu-kán ʔUTU-uš ne-pí-sa-az kat-ta ša-ku-wa-it* "and the God of the Sun looked down from the sky" (The Song of Ullikummi, I Table, A IV 33; reconstruction after Güterbock).

A Germanic-Celtic-Baltic (Old Lithuanian) isogloss (possibly based on a common preservation of an archaism) is constituted by the use of the negative **nē/*nē*-²⁷ as an introductory (sentence) negative, after which enclitic particles follow. This use was also possible in Vedic and Mycenaean Greek, but Hittite and Anatolian in general shows an innovation (Hittite *na-tta* may begin a sentence with enclitics following it, but the negative itself is probably an old compound).

who suggests, in his study of these two particles, that they reflect two different words, one of which is represented by Vedic *kam* = Hittite *kan*, and another (with different meaning) by Gothic *ga-* and Latin *com-* (Dunkel 1990, pp. 115-122).

²⁶ Mentioned by Watkins 1997, pp. 619-620, who is cautious in his attitude towards the etymology of the particle. On the Italic material, see also C. Wilhelm, "Word Order Change ...", this volume.

²⁷ Neckel 1913.

Among Gothic enclitic elements, the interrogative particle *-u*²⁸ has an exact correspondence in Vedic *u* "and, also" and Homeric Greek *αὐ*²⁹ Gothic *-nu-* is used in the second position (12 above), as in many cases in Baltic (Latvian *nu*), Vedic, Arcado-Cypriote (*ó-vu*) and Phrygian,³⁰ Tocharian A *pat nu* (versus Hittite *nu-pat*, and in an identical Baltic combination: Old Lithuanian *nuo-pat*). This element **n-u/o* usually introduces sentences in Hittite and verbal complexes in Old Irish and Balto-Slavic (where in Lithuanian it may be both enclitic and proclitic); see below on the Gothic construction with an enclitic verb or noun.

Gothic *-lva-* (2 above) preserves its connection to an interrogative/indefinite (originally perhaps relative) pronoun, but at the same time can be compared to enclitic particles in different Indo-European languages (cf. the prehistory of Gothic *-uh*, particularly in combinations like *ni-h* < **ne-k^we*³¹ = Latin *ne-que*). After analyzing the data, Gonda came to the conclusion that "an indefinite *lvā-* and the complementary-corresponsive *-(u)h* developed into *lvazuh* 'everybody', the more so as in other cases this pronoun may be taken to represent an 'if somebody' ... If the Hittite *kuiški* 'somebody' really contains *ki* < *k^we* ... it may perhaps be considered a parallel".³² In Old Hittite the pronoun *kui-* may be put into the unstressed position. In Palaic and Luwian a related element *kuwa-* serves as an enclitic. The same Indo-European and Proto-Germanic syntactic structure,³³ with the second element derived from the Indo-European relative/interrogative **k^wo-*, is also reflected in some Gothic compound pronominal forms, as (15) *þis-lvad-uh (+ þad-ei) gaggis* "wherever you go" = ὅπου ἐὰν ἀπέρχῃ, Mt. VIII.19/+ þ-ei gaggaiþ "whenever you enter" = ὅπου ἐὰν εἰσέλθῃτε εἰς οἰκίαν, Mk. VI.10); (16) *þis-*

²⁸ Jones 1958; 1959.

²⁹ Klein 1982, 1987; 1989; Klein, Condon 1993, pp. 34-46.

³⁰ Watkins 1962, p. 17; Ivanov 1965, pp. 236, 242. See also above on the combination with **kom*.

³¹ Klein, Condon 1993, p. 49 (the article provides a detailed discussion of the use of *-uh* together with an etymological study, according to which it is traced back to **[a]u-k^we*); Klein 1994, p. 255, fn. 6; cf. Dunkel 1992, p. 167.

³² Gonda 1975, p. 318.

³³ On the probable unaccentuated character of this element see Prokosch 1939, pp. 278-279.

lah (+ pat-ei "whatever" = ὅ ἐάν, Mk. VII.11); (17) bis-lar-uh (+ p-ei "whenever" = ὅπου ἄν, Mk. IX.18; = ὅπου ἐάν "wherever", Mk. XIV.9); (18) bis-laz-uh (bis-lad-uh + ei "whomever, anyone" = ὅτι δὲ ἄν, Mk. XI.23, at the beginning of a syntactic phrase; cf. lah-uh "everyone" + sa-ei "everyone who" = πᾶς ὁ, at the beginning of a sentence: L. XX.18); bis-lamme-h + sa-ei "whomever" = δὲ ... ἄν, Mk. IV.25; jah bis-lamme-h p-ei "and to anyone" = καὶ ὃ ἐάν, L. IV.6); bis-lano-h sa-ei "whomever" = ὅστις ἄν, Mt. X.33), (19) pata-lah "whatever" = ὅ ἐάν, J. XV.7 (cf. pat-up[=h]-pan "this" = τοῦτο, 1 Tim. II.3, where the Gothic text seems to add another emotional shade to the beginning of the sentence); (20) sa-laz-uh sa-ei "whoever" = δὲ ἐάν, L. IX.48 (cf. the same construction with +nu inserted in the middle: Mt. X.32); (21) du-lve "why" (Mt. IX.4; at the beginning of a sentence in the interpolation in L. IX.43) and parallel du-pe/du-h-pe/du-p-pe < du-uh-pe "for that reason" = διὰ τοῦτο, 1 Tim. I.16; J. VI.65, at the beginning of Jesus' direct speech/+ ei after a Votive, L. I.13; cf. also bi-lve "how" = κατὰ τί, L. I.18, at the beginning of a direct question).

The Indo-European pronominal stems in *t- as reflected in Gothic in 15-19 and *so- (Runic sa-) as in 20 are related to sentence-introducing elements in Old Hittite, Baltic (Old Lithuanian) and Slavic, and Celtic; in Anatolian, cf. Old Hittite š-, ta- as sentence-introducing words, and in Celtic, note Gaulish so- in demonstrative function: so-sin vēm̃eton, so-sin celicnon.³⁴ The initial ja- in Gothic (cognate to Runic ja[h]) is found in (22) ja-h "and, also" = καὶ (as most frequently),³⁵ (23) ja-d-du/ja-h-du "and to" (2 C. II.16, at the beginning of a syntactic phrase that starts with καὶ in Greek; cf. jappe < ja-h-pe "either or"), (24) ja-u, interrogative word (J. VII.48, at the beginning of a direct question after sai). Gothic ja- is genetically identical to a similar initial element (from the relative pronoun *yo-³⁶) in Mycenaean Greek (j)o-, Phrygian (ioç), and Balto-Slavic (Latvian Debitive, Proto-Slavic *jakŭ = Hit.

³⁴ Gaulish -sin may be a match for Hit. -šan; Watkins 1997, p. 618.

³⁵ Greek καὶ is regularly rendered by ja-h: 487 of 494 cases in the Gospels (Klein, Condon 1993, p. 2).

³⁶ Gonda 1975, pp. 164-204.

ya-kku = Gothic jah³⁷), probably also in Southern Anatolian (Luwian a-), whereas in Northern Anatolian (Hittite) and Tocharian A, comparable conjunctions are always enclitic, as also with Balto-Slavic pronouns in constructions with adjectives equivalent to those which are found in Vedic. The sequence of Gothic ja-h + enclitic verb in (25) jal/jah liban "and to live = life" = καὶ τοῦ ζῆν (2 C. I.8) is identical to the type of Mycenaean Greek jo-do-so-si. The same type of enclitic verb is present in Gothic (26) Iva nu-k[=h]-kant "how do you know" = τί γὰρ οἶδας (1 C. VII.16, in the beginning of a sentence with obligatory second position for nu, see above), identical to the pattern of Old Hittite nu-maldahhun "I prayed", Old Irish no-feidtis, Old Church Slavonic ny-imatŭ, see above on the position of *nu- as a first element and the change occurring in Vedic and Hittite. In the position after the introductory *yo- or *nu-, an enclitic noun may be used both in Gothic — (27) ja-b[=h]-brusts "and your affection (literally breast)" = καὶ τὰ σπλάγχνα (2 C. VII.15) — and in Old Hittite — nu-šakuwa-tet "and your eyes".

The enclitic position of the verb after an introductory pronoun related to Indo-European *to- is clear in cases like pat-ist "in other words = that is" = τοῦτ' ἐστίν (R. IX.8, at the beginning of a sentence); comparable facts can be found in Old Russian conversational speech.³⁸

If the verb is put in initial position, the enclitic elements follow it according to Wackernagel's law³⁹: (28) was-up[=uhl-pan] Iohannes gawasiþs taglam ulbandaus "John wore (= was dressed in) clothing made of camel's hair" = ἦν δὲ Ἰωάννης ἐνδεδυμένος τρίχας καμήλου (Mk. I.6, at the beginning of a sentence; here and in the following examples a loan-translation from the Greek seems probable)/was-uh þan hulundi "it was a cave" = ἦν δὲ σπήλαιον (J. XI.38, at the beginning of a sentence); (29) wesun-up[=uhl-pan] "were (present)" = ἦσαν δέ (Mk. VIII.9, at the beginning of a sentence; Greek influ-

³⁷ Eichner 1971; Ivanov 1979, p. 76; Klein, Condon 1993, pp. 47, 58, fn. 38. These facts seem important in the light of remarks by Wackernagel 1955a, cf. Dunkel 1990, pp. 100ff.; on the symmetrical *to-k^we (Hit. ta-kku) in Germanic (Modern German doch) see: Dunkel 1992, p. 167.

³⁸ Zaliznjak 1985, pp. 154-158.

³⁹ On the different cases in which -uh is used after a verbal form, see the analysis in Klein, Condon 1993, pp. 6-8, 13 a.o.

ence seems possible here); (30) *sijaip-pan* "let it (the word)" = ἔστω δέ (Mt. V.37, initial position); (31) *bidjandans-up-pan* "(while) praying" = προσευχόμενοι δέ (Mt. VI.7, sentence-initial). The closest parallels are presented by Tocharian enclitics following a verb and Old Lithuanian reflexive verbs without a prefix. The same behavior at the beginning of a sentence is exhibited by predicate nouns with modal meaning: (32) *skuld-u ist* "is it permitted (lawful, right)" = ἔξεστιν (Mk. XII.14); in this case the structure differs from the Greek original. A pronominal adjective can also combine with following enclitics: (33) *sumz-up[=hl]-pan* "another" = ὅς δέ (1 C. XI.21 A).⁴⁰ From a purely formal point of view, such a structure combining an adjective with an enclitic (see also the participle in 31 above) can be compared to the Balto-Slavic pronominal adjectives; for them also a semantic parallel may be found in Germanic.⁴¹

This archaic system — practically identical to the dialectal Indo-European one — coexists with another, which is characterized by the possibility of having two preverbs in sequence according to cyclic rules, as in Hittite, Balto-Slavic and Celtic. In preverb combinations, including privative *un-* and *ja-h-* with a following *-ga-*, the latter becomes enclitic: (34) *faura-ga-sandida* "I was sending" = ἔπεμψα (2 C. IX.3); (35) *un-ga-sailvanamma* "invisible" = ἀοράτω (1 Tim. I.17); (36) *ni fairweitjandam pizei ga-sailvanane, ak pizei un-ga-sailvanane; unte po ga-sailvanona riurja sind, ip po un-ga-sailvanona ai-weina* "So we fix our eyes not on what is seen, but on what is unseen. For what is seen is temporary, but what is unseen is eternal" = μὴ σκοπούντων ἡμῶν τὰ βλεπόμενα ἀλλὰ τὰ μὴ βλεπόμενα· τὰ γὰρ βλεπόμενα πρόσκαιρα, τὰ δὲ μὴ βλεπόμενα αἰώνια (2 C. IV.18); (37) *jag-ga-traua* "and believe (trust)" = καὶ πέπεισμαι (R. XIV.14). For the combination *un-ga-* one may suggest a semantic parallel in Celtic: cf. OI *ni-con-*, with the same relationship between the negative and a preverb that can be traced back to an IE particle.

Thus, in many of the cases cited above, a verbal complex appears in sentence-initial position, reminiscent of the original syntactic patterning in Indo-European. In certain other cases, a similar structure is reproduced only

⁴⁰ Cf. on *sumaih pan* "and some" in J. VII.44: Klein 1994, p. 272.

⁴¹ Wijk 1935; Haudry 1981.

at the morphological level, where the scope of the rules is no longer the sentence, but a verbal phrase or an individual verbal form. Still, the etymologies of the constituents together with the pattern as a whole prove the Indo-European origin of these constructions.⁴²

References

- Bally, Charles. 1945/1997. *Manuel d'accentuation grecque*. Berne: A. Francke (repr. Georg, 1997).
- Brugmann, Karl. 1913-1914. Das gotische Partikel *-uh*, *-h*. *Indogermanische Forschungen* 33.173-180.
- Delbrück, Berthold. 1888. *Altindische Syntax*. Halle-Saale.
- Delbrück, Berthold. 1893-1900. *Vergleichende Syntax. Grundriß der vergleichenden Grammatik der indogermanischen Sprachen*, Bd. III-V. Straßburg.
- Dillon, Miles. 1947. Celtic and the Other Indo-European Languages. *Transactions of the Philological Society* (London), 15-24.
- Dunkel, George E. 1990. J. Wackernagel und die idg. Partikel **só*, **ke*, **kem* und **an*, in Eichner and Rix 1990, 101-130.
- Dunkel, George E. 1992. Die Grammatik der Partikeln. *Rekonstruktion und relative Chronologie* (Akten der VII Fachtagung der Indogermanischen Gesellschaft, Leiden, 1987). Innsbruck (IBS 65).
- Eichner, H. 1971. Urindogermanisch **k^we* "wenn" im Hethitischen. *Münchener Studien zur Sprachwissenschaft* 29.27-46
- Eichner, H., and H. Rix (eds.). 1990. *Sprachwissenschaft und Philologie: J. Wackernagel und die Indogermanistik heute* (Basel Colloquium 1988). Basel.

⁴² This article represents an expanded version of an invited lecture presented at the Berkeley Germanic Linguistics Roundtable, University of California, Berkeley, April 3 1998. For various comments and suggestions, the author is indebted to the Berkeley audience and to those who read the paper in draft form, in particular to Irmengard Rauch and Brent Vine.

- Elizarenkova, Tat'jana Ja. (transl.). 1989. *Rig Veda*, Mandaly I-IV. Moscow: Nauka.
- Gamkrelidze, Thomas and Vyacheslav Ivanov. 1995. *Indo-European and Indo-Europeans*, vols. I-II. Berlin-New York: De Gruyter.
- Gonda, J. 1975. *Selected Studies*, vol. I (Indo-European Linguistics). Leiden: E. J. Brill.
- Hale, Mark. 1987. Notes on Wackernagel's Law in the Language of the Rigveda. *Studies in Memory of Warren Cowgill* (ed. Calvert Watkins), 38-50. Berlin: De Gruyter.
- Haudry, Jean. 1981. Les deux flexions de l'adjectif germanique. *Bulletin de la Société de Linguistique de Paris* LXXVI/1.191-200.
- Hill, Steven P. 1977. *The N-Factor and Russian Prepositions. Their Development in 11th-20th Century Texts*. The Hague-Paris: Mouton.
- Hoffner, Harry A., Jr. 1973. Studies of the Hittite Particles, I. *Journal of the American Oriental Society* 93/4.520-526.
- Hrozný, Friedrich. 1916. *Die Sprache der Hethiter, ihr Bau und Zugehörigkeit zum indogermanischen Sprachstamm. Ein Entzifferungsversuch*. Boghazköi-Studien, hrsg. von Otto Weber, 1. Heft, 1. Lief.. Leipzig: J. C. Hinrichs.
- Ivanov, Vyacheslav V. 1958. The Importance of the New Data of Hittite and Tocharian. *Proceedings of the Eighth International Congress of Linguists*. Oslo: University of Oslo.
- Ivanov, Vjačeslav V. 1959. Toxarskie jazyki i ix značenie dlja sravnitel'no-istoričeskogo issledovanija indoevropejskix jazykov. *Toxarskie jazyki* (ed. V. V. Ivanov), 5-37.
- Ivanov, Vjačeslav V. 1965. *Obščeeindoevropejskaja, praslavjanskaja i anatolijskaja jazykovye sistemy*. Moscow: Nauka.
- Ivanov, Vyacheslav V. 1979. Syntactic Archaisms of Old Hittite. *Hethitisch und Indogermanisch* (ed. E. Neu and W. Meid), 73-78. Innsbruck (IBS 25).
- Jones, Oscar F. 1958. The interrogative Particle -u in Germanic. *Word* 14/2-3.213-223.
- Jones, Oscar F. 1959. "Art thou he who has to come". *Festschrift für J. G. Kunstmann*.

- Josephson, Folke. 1972. *The Function of Sentence Particles in Old and Middle Hittite*. Uppsala: Acta Universitatis Uppsaliensis.
- Josephson, Folke. 1976. On the function of the Gothic Preverb *ga-*. *Indogermanische Forschungen* 81.152-175.
- Josephson, Folke. 1995. Directionality in Hittite. *Kuryłowicz Memorial Volume, Part One* (ed. W. Smoczyński), 165-176. Cracow: Universitas.
- Josephson, Folke. 1997. Review of J. Boley, *The Sentence Particles and the Place Words in Old and Middle Hittite*. *Bibliotheca Orientalis* LIV/1-2.155-160.
- Klein, Jared S. 1978. *The Particle u in the Rigveda. A Synchronic and Diachronic Study*. Göttingen: Vandenhoeck & Ruprecht (KZ Erg. 27).
- Klein, Jared S. 1982. Rigvedic *tú* and *sú*. *Sprache* 28.1-26.
- Klein, Jared S. 1989. Homeric Greek *αὖ*: A Synchronic, Diachronic, and Comparative Study. *Historische Sprachforschung*. 101.249-288.
- Klein, Jared S. 1992. On the Idiomatic Nature of the Gothic New Testament: A Comparative Study of Prepositional Usage in Gothic and New Testament Greek. *Transactions of the Philological Society* 90/1.1-80.
- Klein, Jared S. 1994. Gothic *paruh*, *panuh* and *-(u)h pan*. *Indogermanische Forschungen* 99.253-276.
- Klein, Jared S., and Nancy L. Condon. 1993 Gothic *-u(h)*: A Synchronic and Comparative Study. *Transactions of the Philological Society* 91.1-62.
- Krisch, Thomas. 1990. Das Wackernagelsche Gesetz aus heutiger Sicht, in Eichner and Rix 1990, 64-81.
- Lehmann, Winfred P. 1986. *A Gothic Etymological Dictionary*. Leiden: E. J. Brill.
- McCone, Kim Robert. 1979. *Aspects of Indo-European Sentence Patterns and their Role in the Constitution of the Old Irish Verbal System*. Oxford, D.Phil. Diss.
- Macdonell, Arthur Anthony. 1972. *A Vedic Reader for Students*. Madras: Oxford University Press (8th impression).
- Melchert, H. Craig. 1994. *Anatolian Historical Phonology*. Amsterdam: Rodopi.
- Melchert, H. Craig. 1994a. *Anatolian. Langues indo-européennes* (ed. F. Bader). Paris.

- Moulton, Harold K. 1978. *The Analytical Greek Lexicon Revised*. Regency Reference Library. Grand Rapids, Michigan: Zondervan.
- Neckel, Gustav. 1913. Zu den germanischen Negationen. *Zeitschrift für vergleichende Sprachforschung* 45.1-23.
- Prokosch, Eduard. 1939. *A Comparative Germanic Grammar*. Philadelphia: Linguistic Society of America and University of Pennsylvania.
- Sommer, Ferdinand. 1947. *Hethiter und Hethitisch*. Stuttgart: Kohlhammer.
- Sturtevant, Edgar H. 1939. The Pronoun *so, sã, tod and the Indo-Hittite Hypothesis. *Language* 15.11-19.
- Sturtevant, Edgar H. 1952. The Prehistory of Indo-European: A Summary. *Language* 28/2, part 1.
- Sturtevant, Edgar H., and Adelaide Hahn. 1951. *A Comparative Grammar of the Hittite Language* 1 (rev. ed.). Philadelphia: Linguistic Society of America.
- Wackernagel, Jakob. 1879. Über einige enclitische Nebenformen der Personalpronomina. *Zeitschrift für vergleichende Sprachforschung* 24.592-609.
- Wackernagel, Jakob. 1955. Über ein Gesetz der indogermanischen Wortstellung. *Kleine Schriften*, Bd.I, 1-103 (= IF 1 [1892] 333-436). Göttingen: Vandenhoeck & Ruprecht.
- Wackernagel, Jakob. 1955a. Idg. *q^{we} als nebensatzeinleitende Konjunktion. *Ib.*, 257-261.
- Wackernagel, Jakob, and Albert Debrunner. 1930. *Altindische Grammatik*, Bd. III. Nominalflexion, Zahlwort, Pronomen. Göttingen: Vandenhoeck & Ruprecht (repr. 1975).
- Watkins, Calvert. 1962. Preliminaries to a Historical Analysis of the Syntax of the Old Irish Verb. *Celtica* VI.1-49.
- Watkins, Calvert. 1964 Preliminaries to the Reconstruction of Indo-European Sentence Structure. *Proceedings of the Ninth International Congress of Linguists* (Cambridge, Mass.), 1035-1045.
- Watkins, Calvert. 1997. Delbrück and the Syntax of Hittite and Luvian: Predictive Power. *Berthold Delbrück y la sintaxis indoeuropea hoy* (Actas del Coloquio de la Indogermanische Gesellschaft, Madrid, 1994;

- ed. Emilio Crespo and José Luis García Ramón), 611-630. Madrid-Wiesbaden: Ediciones de la UAM/Dr. Ludwig Reichert Verlag.
- Wijk, Nicolaas van. 1935. Eine slavisch-germanische syntaktische Parallele. *Germanoslavica* (Prague) 3.19-30.
- Zaliznjak, Andrej A. 1986. Novgorodskie berestjanye gramoty s lingvističeskoj točki zrenija, in V. L. Janin and A. A. Zaliznjak, *Novgorodskie gramoty na bereste iz raskopok 1977-1983 godov*, 89-219. Moscow: Nauka.
- Zaliznjak, Andrej A. 1993. K izučeniju jazyka berestjanyx gramot, in V. L. Janin and A. A. Zaliznjak, *Novgorodskie gramoty na bereste iz raskopok 1984-1989 godov*, 191-318. Moscow: Nauka.
- Zaliznjak, Andrej A. 1995. *Drevnenovgorodskij dialekt*. Moscow: Škola "Jazyki ruskoj kul'tury".

Aggression and Sustenance: Driving (*ag-) and Beating (*g^hen-) Symbiosis in (Proto-)Indo-European

Raimo Anttila

Et ἄγω in Arcadia

A nominal formation tied to *ag- 'drive' is *agros: ἄγρός 'field', Sanskrit *ājra* 'pasture-land, flatland', Latin *ager*, Germanic *Acker* ~ *aker* ~ *akker* ~ *acre* 'field', and Armenian *art* 'field'. German *Trift/treiben* is often induced as a perfect parallel, which it in fact is, although not all think the *ag- ~ *agros connection proven (e.g. Meyer 1901:1.122 "not yet semantically founded"). On the other hand, note Schwyzler (1.488 [1938]) who states that *agros thus meant the meadowland(s) where the cattle were driven to graze. A good treatment for us about this matter is Chantraine (1956), in part because he does not take the connection as absolutely proven. The earliest Greek (Homeric) meaning of ἄγρός is 'countryside', even 'far-away places', and when it comes to the activity of men, it is pastoral activity rather than agricultural (tilled land is ἀρουρα, etc.). This is the open land that contrasts with towns and houses. Lat *ager* is formulaically divided into *publicus*, *privatus*, and *Campanus*, which stand against *urbs*; note further adverbs like *peregrī* and *peregrē* 'abroad, far away', *peregrinus* 'foreign(er)' (see also Magne 1.153-158, Thieme 1964:591-592, Benveniste 1973:256-257). Thus *ag-ro-s seems to confirm the idea that it was an open place where one drove (grazed) animals (1956:33-36). This kind of meaning is exactly what remained for Lat *salvus* 'untilled mountain land, woodland-pasture'. Derivatives further strengthen this interpretation. What pertains to the ἄγρός is ἀγρότερος 'wild' (exactly like Lat *agrestis* and *rusticus* are opposed to *domesticus*), a frequent determiner of Artemis, ἀγροτέρα, as she is connected with wild animals. Another adjective for wild animals and people is ἄγριος, which later came to be applied more generally also to battle and feelings (and note its derivatives like ἀγριάνω 'be wild', ἀγριώω 'make wild'). Wildness came also through ἀγριότης. Thus

new terms kept coming out for 'belonging to the country', ἀγρεῖος, and this also went to 'boorish' (ἀγρειοσύνη 'clownishness'), requiring a new wild term, e.g., ἀγρικὸν πήγανον 'wild rue' (36-38). Compounds enhance the same picture: ἀγρονόμος and ἀγροικός 'who lives in the country', ἀγραυλός 'who sleeps or lives in the country, on the outside', ἀγροβάτας 'who lives in the country', ἀγρυπνός 'who sleeps in the open' (and then with soldiers and shepherds 'who is awake, alert') (38-40). The nouns involved generally designate wild animals, shepherds, and soldiers, exactly beings who do not stay in the settled communities all the time.

The contrast here is between the original camp, village, or settlement vs. the rest of the world. Livelihood had to come mainly from this rest of the world, whether it was hunting, gathering, cattle-raising, viticulture, agriculture, or even commerce. This is where people had to do their things, ἔργα ἀνθρώπων: Od. 6.259 ὅφρ' ἂν μὲν κ' ἀγροὺς ἵομεν καὶ ἔργ' ἀνθρώπων [Nausikaa advises Odysseus to hide behind the mules] 'as long as we pass the *agroí* and the works of men'. We are not told what the activities are, but we can easily imagine or ἀναγιγνώσκειν them, as well as the *agroí*, on the above lines. Thus cases like Od. 1.185, 24.308 νεῦς δέ μοι ἦδ' ἔστηκεν ἐπ' ἀγροῦ νόσφι πόλης, usually translated that 'my ship lies there beside the fields (tilled land) away from the city', does not really say so at all.

Although the Germanic 'field'-word, Gothic *akrs*, etc., is clearly arable land, there might be a vestige of something like the earliest Greek in Old Icelandic *akr* which aligns itself with *engi* 'meadow, pasture' as 'out-field' against *tún* [town] 'the enclosed home-field, the in-field': *bleikir akrar en slegin tún* 'pale out-fields and mown in-field' (note the hit/slay term for mowing). At least this speaks for the naturalness of a town-vs.-country conception.

Running a trapline

Hunting grounds. One of the early Greek hunting terms is *ἀγρᾱ* (< **agrā*) 'hunt, game, booty', and this has further confused the issue, because it looks so much like the open country term ἀγρός (morphologically, a collective to it?; Schwyzler 1.581-2: short *a* would be better). Here the doubts about a connection with *ἄγω* get stronger, even though ἐπάγω 'set on (dogs)'

produces ἐπακτήρ 'hunter' (later even 'fisherman') (Buchholz 1973:6). The general preference for the home base of ἄγρα has been (mainly Aeolic) ἀγρέω 'seize, grab, catch'. This kind of either-or stance is a curious self-imposed restriction, because real life in historical context tends to be both-and, perhaps exemplified exactly in ἀγρότης, both 'peasant' and 'hunter'. In Homer horses and wagons were not employed in hunting (Buchholz 73), whereas dogs give a central cluster, around "dog-drivers", κυνηγός and κυνηγέτης 'hunter', and a rich cluster of derivatives both in hunting and chasing as well as the result of hunting, game and gain (note that in κυνηγέτης the driver uses dogs but in θηραγέτης the hunter hunts/catches wild animals). Since the oldest form of traps were pits and nets (Buchholz 103, 107; Chantraine 1956:64-65 emphasizes snares as central traps), one did not necessarily just wait for the prey to get caught, one also helped the situation by beating and driving (*Treib[jagd]*, Swedish *drev*). There are some old catching compounds, πανάγρος 'catching all' (Il.5.487 ὥς ᾧψισι λίνοι· ἄλόντε πανάγρου 'as if caught in the meshes of an all-catching net'), all kinds of grabbing tools, πυράγρα 'fire tongs', κρεάγρα 'meat-hook', and (late) βαλανάγρα 'crotchet for collecting acorns'. Then there are sicknesses that grab you, e.g. ποδάγρα 'gout' ('foot-grabber'; also [and originally] 'snare'). Old Icelandic *sókn* 'drag, grapple' is conceptually quite close to the Greek, as it also contains a hunting/grabbing/leading root (**sag-*; as in *seek* and *sake*). From ἐπάγω we have ἔπαγρος 'seeking game, booty', and so on (note ἐναγρος with the same meaning, epithet of Apollo in Siphnos).

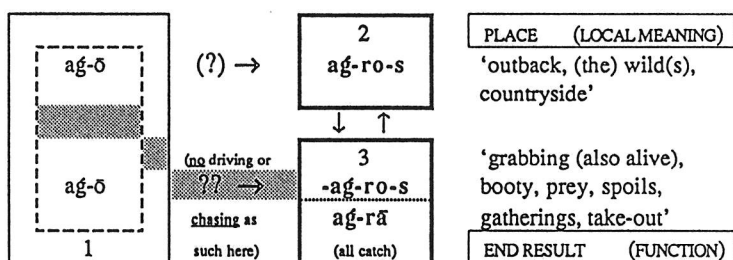
Chantraine stresses the fact that post-Homeric ἄγρα is both the act of taking and the thing taken as its result (1956:41; corresponding to French *prise* [43]; [→ Eng *prize*]), and that it is trapping rather than just taking (46); it is the action of the hunter and fisherman, and the warrior. Thus it is likely that the traditional dictionary connection of ἄγρα/-αγρον with ἄγω can be kept, but it has to be narrowed to the prey taken, or taking somebody or something alive (ζωγρεῖν) (47, 51). Such a connection is not very imposing for him (48; cf. Meyer 1.101, 123: cannot be ἀγ- because the basic meaning is clearly 'grasp, seize'). The pivot for the whole cluster has been a "verbal adjective" ἀγρετός 'chosen' (ἀγρεταί the priestesses of Athena at Cos, Il. 1.526 οὐ γὰρ ἐμὸν παλινάγρετον 'no [word of] mine is to be taken back'). McKenzie (1921) said confidently that there was no doubt that ἀγρετός is the older form of αἰρετός and goes semantically with ἀγρέω and formally with ἀγείρω. He

grappling with the similarity vectors and forces in this domain, as does Vendryes (1938), and anybody ever after, but he comes to the right conclusion that such a distribution of form and meaning indicates that ἀγρέω and ἀγέλω hail from the same original paradigm (1921:48).

Gathering force. The obvious view has been that ἀγρέω is a denominative of ἄγρα/-αγρος, although now the short -ε- is difficult, but αἰρέω could have given its share (see Chantraine 1956:49-50). This would mean that one would have to start either with ἄγω in the meaning of 'take home, bring back', or with ἄ/ἄ-γρ- 'gather, muster, collect', which is really no solution at all (51). There has been rich literature on the agent nouns in -τας/της, and they are important in this connection. I will just take to Leukart (1975:175-176) as the culmination of the line (see also Leukart [1994] for a fuller version with all the documentation anybody would want to have). Furthermore, φυλέτης 'fellow tribesman' shows that a feminine like φυλή can produce short -ε-, and that the o-nouns provide both -ο- and -ε-. The pattern is there already in Mycenaean, e.g., *to-ko-so-ta* (= τοξό-της 'bowman, archer'). Leukart takes the origin of the formation from a local **ores-stās* 'standing on the mountain[s]' (there are Sanskrit parallels), and since *ss > s*, we get a natural reanalysis to **ores-tās* (*O-re-ta*), supported by **orēs-teros* (ὀρέστερος 'of the mountains'). Regression of the accent (ὀρέστης) would be normal. Now the set-up *ores-tās* : *ores-teros* = *X* : *agro-teros* must be solved as *X* = *agro-tās*, and we get exactly our ἀγρότης (182, 188-189). The pattern is now on its way, and we get next *wastutās* 'townsman', and the (functional) *nautās* (also functional *wergatās* to local *agrotās*), and the whole sequence smacks of the main stages in the immigration of the Greeks from the north to their later settlements (182). Once the formation reached the verbs, ἐρέ-της 'rower', κλέπ-της 'thief', ἰκέ-της 'suppliant' (who comes), etc., there was strong support for taking anything preceding the agent suffix as a verbal stem, and ultimately any vowel could precede it. Schwyzer (1.500) takes ἀγρόται (Il. 11.385) from a noun, whereas αὐταγρετός is a verbal adjective (502); the issue has been totally blurred.

Since οἶκος is any dwelling place, δῆμος can be taken as an extension of it, both thus contrasting with ἀγρός 'driving [sustenance supplying] grounds'. We already saw the problem of the strict unpredictability of -ε/ο-. Here we have οἰκέτης 'household slave' (but one Attic inscription has οἰκότης) and

δημότης (one inscription with δαμέτας) (membership is a variant of local meaning). But from ἀγρός we have ἀγρότης and from -αγρος apparently ἀγρέτης, although the meanings for this one are a bit blurry, but suggestions like 'hunter, collector, chief/leader' have been put forward with good reason. Apollo's epithet on Chios is 'Αγρέτης, and strictly speaking any of these meanings are theoretically possible, if Ares is 'Αφνειός in Arcadia (see below). Is there reason for the variation in vowels? Let us sum up the situation so far, putting some emphasis on Chantaine's analysis:



There are two focal points (2 and 3) which agree considerably in form, and whose meanings are different in that we have a contrast between local and functional meaning. Also Russian *zagón* 'strip of land, cattle pen' (2) and 'hunt' (3) comes close, and note further *vygon* 'driving to pasture' (1), 'pasture' (2), and *vygonščik* 'prey' (3), plus many other compounds with *gon*, all clearly from *gon*- 'drive'. Whether this middle dark-lined column (↓↑) is derived from (1) is questioned by many, and this is rendered with a grey area as a reminder (with Chantaine's "no chase — all catch" written in [in English *chase* this is quite obvious, 'the hunt, and its result, the quarry' (1, 2)]). The meanings overlap considerably, because (3) takes place in (2); this tie is inherent. In this rather confusing situation one would expect that the speakers would go for the formal differences available and come out with (local) ἀγρότης (2) and (more functional) ἀγρέτης (3). It does not stop here. A fair number of other shapes or agent nouns are attested, and verbs derived from them. From the (2)-side (where ἀγροικός remains clear all the time for the meaning) we have ἀγροτήρ, ἀγρέτης, ἀγρώ(σ)της (ἀγρώστης occasionally 'hunting'), and ἀγροιώτης, and the (3)-box supplies ἀγρεμών, ἀγρεύς,

ἀγρευτής/ρ. It is pointless to go into the chronology here (see Chantraine 1956:52-63), but it all shows that the vowels are more or less true to the (2 vs. 3-) distinction all through Greek. McKenzie's suggestion that ἀγερπλᾶ 'midwife' is dissimilated from *ἀγερπλᾶ is rather good (for the semantics cf. Finnish *saaja* 'bridesmaid' (getter), *saajaiset* 'giving birth' (gettings; and see further below), Russian *vygonka* 'abortion', and German *abtreiben* 'procure abortion').

This ἀγρε- with such strong verbal color in the agent noun, together with contamination with ἀρπεῖν and ἐλεῖν, is clearly the base of the denominative ἀγρέω. Since its paradigm is so fragmentary we need not worry too much about its lack of long η, normal in normal types like γαμέω. There is a participle with -γρ- that is usually taken from ἀγερ- 'gather together, assemble, collect', viz. ἀγρόμενος, but there is really no way of knowing whether ἀγρόμενοι swine or cows are 'gathered' or 'herded', i.e., 'driven'. This is the problem of the short vowel, because if it is taken as a functional thematic vowel it would match a "thematic" ἀγρόμενος. Then there are a few instances of "wrong" initials, e.g., ἔγρετο λαός 'the army gathered itself'. These make sense only as contamination from ἐγείρω 'awaken, rouse, stir up', passive 'wake, rise, rouse or stir oneself', and such meanings basically fit the situation. Indeed, Liddell & Scott take this very case from *εα > *η > ε as the meter would allow it here anyway from the middle point onward (**ε-αγρετο matching nicely ἀγρόμενος). There is no reason to go into our standard handbooks that take the verb from *hg-es- amid an incredible formal junkyard. Whatever Latin *gerō* and *grex* are, they cannot be used to explicate the Greek.

Although no clear paradigm arises as such, McKenzie was right in suggesting that ἀγρέω and ἀγείρω have split off from the same source; both are gathering and collecting. Now the formal problem is shifted to the ἀγερ-side. It looks as though a bleached neuter noun *ag-r̥ was thematized into *ag-r-o- and its partner *ag-r-a-, and these go well with the oblique-stem type *ag-η. Formal blurring would have supported an interpretation of a root shape *ag-/ *ager-, as Cowgill thought (1979), although one might have expected rather *ἀγαίρω or *ἀγαίω as the verb (with zero grade of the root). There is extremely rich evidence from the dialects for an (-i-, -ti-, -ya-, -mo-) extension on the zero grade, generally the panegyric, 'national or festal assembly, people assembled' (without the παν-, etc.): ἡγυρις, ἀγυρμός, ἀγορσις, ἀγορία,

ἀγαρρ[ις], and full grade ἀγερσις and ἀγερμός 'collection, call-to-arms'. The -op- shapes are ambiguous between zero and o-grade, depending on the dialect, but all this shows the strength of the zero grade in the nominal cluster. Add to this the o-grade of ἀγείρω, ἀγορά 'assembly of the people, place of assembly, market-place' and its rich derivatives in the meanings of the business of the *agora*, viz. public speaking, marketing, and selling, and there seems to be no end. We again meet the place and function aspect of a word (Pindar even 'meeting for games').

Let us look back at the above diagram. Is there now a possibility that both boxes (2 and 3) would give us a faint glimpse of an original noun **ag-r-*? I feel it may. Note that ἔλε-, closely tied with **ag-* in meaning, sports an Epic ἔλωρ 'spoil, prey', which has the r-ending in a different grade (ζῶν ἐλεῖν like ζῶγρεῖν) (also Olr *aigid* is suppletive with *ebla*). It is to be noted that such spoils include unburied corpses of men that might become food for wild animals and dogs. In Il. 18.93 Πατρόκλοιο δ' ἔλωρα ... ἀποτ(ε)ιση '[Achilles tells Hector that] he will pay for the spoils of Patroclus' functionally means the killing of Patroclus, making him the spoils. This was the color at the trap, the pit, and battle.

There is also ἀγύρτης 'beggar' (built on **ag-r-*). Such beggars were members of religious orders, thus coming close to tax collectors as drivers (*Treibe* and *Eintreiber*, Lat *exactor*, from *exigere* 'to collect [drive out] taxes, debts, and interest'; note the oppositon *Ein-* vs. *ex-*, i.e., one can look at it from both ends). In Heracleum an official who gathered grain for the community was called σιταγέρτης. Finnish *ajelustaa* 'to gather food and wool etc. (from farms)' fits exactly in this kind of context, and it is also built on a noun like the Greek. The agent noun *ajelustaja* is not a professional beggar, but somebody who does it a few times a year. Particularly brides, even well-to-do ones, practised the institution (cf. *ajaa myötäjäisiä* [drive dowry =] 'collect dowry', *ajosusi* [drive wolf] 'the one who does the collecting'). This kind of collection is clearly an extension of the more concrete one in the checking of snares, nets, and pits, and even gathering nuts and berries. Russian *zagónščik* in the meaning of 'collector of food for an army in war' is not far off.









Let us make another pit stop at the above diagram, and address two more points, now that the original formal identity of boxes (2) and (3) has been settled: Is it likely that the same noun has both action meaning and result-of-action readings (the vertical axis), and can the central boxes be derived from

(1) (the horizontal axis)? The first of these does not merit discussion, as it is indeed a commonplace in Indo-European, and elsewhere, e.g., in Finnish, where only the *-minen* nouns are strictly tied with action alone. Semantic bleaching has been aided by obfuscation of the r-element in Greek, and thus Chantraine did not see any driving between (1) and (3), as observed clearly by others, e.g. by J. H. H. Schmidt (2.441-442). Getting and taking semantics is strong in (3). Note how Latin *capere/captus* 'take, seize, grasp' also developed readings 'catch, hunt down, take', and this ultimately gives English *catch* (3) and *chase* (→) (going right-to-left in hunting semantics in that diagram). Different variants occupy different corners of the semantic field, and it does not matter where the difference comes from. Illustrative is Finnish *ottaa* 'take', but dial. also 'kill, slaughter, trap', its frequentative *otella* 'fight', and *otus* 'game animal, prey, booty', i.e., something taken. Then the following cluster supplies a number of forms, with rather clear derivatory connection: *saada* 'get', but also 'find', *saalis* 'game animal, war spoils, prey, catch, haul, take', *saakki* 'saalis', *saanta*, *saanti*, *saanto*, *saannos* 'saalis; gain' (Karelian *soaha* etc. [with the same root] also 'seek, trap'). And best of all, one could put all of Finnish 'drive' in box (1) and get the semantics under discussion, without any formal or semantic problems! From the stem *aja-* 'drive' we have *ajo* 'driving (1), herding, hunting (→), plowing (closest to 2), booty (3) (*meren ajo* 'what the sea brings')', and with a different suffix, *ajinki* 'game (animal)' (3). Further, from the fishing side, which has not been emphasized here, we have the frequentative *ajele-*, from which *ajelu* [drive] 'catching whitefish', and cf. Estonian *aje* 'torch fishing'. The general pickin' cacciatore in (3) can bleach down from very aggressive beginnings, witness German *kriegen*, now just 'get'.

The above traced my own history through Finnish parallels. Another surprise is that a direct battue-hunting term with driving meaning from early Latin is generally ignored in this context. This is *indāgō* 'a surround, line of hunters' from *indāgō* 'to trace, track', i.e., "drive in", then later also 'investigation' and 'investigate, discover'. 'Striving for' or 'trying to get' comes out also in the clear driving construction in Latin *id agere, ut ...* It is "an accident" that Greek has an r-form for the hunting term.

At the kill. In a hunting-and-gathering situation the collection point is at the end of the activity, the prey is the goal. If the prey taken is an animal, killing is

implied, it is an automatic contextual reading or effect. In the diagram below, the white part delineates this activity, and it is divided in two according to the verbs used. We see how beating wins over driving at the end. Beating is of course often involved in the driving aspect, i.e., scaring up animals to be driven. English prefers to call such actants beaters (*beating [around] the bush*), German calls them drivers (thus also in Finnish; note that in English drovers are cattle-drivers, on the more peaceful side; Dutch *drijfver* covers it all, 'drover, driver, beater, embosser, fanatic [, and floater'])). In Balto-Slavic the distinction gets lost since sector II is taken over by the form of III, driver and beater is the same thing (Russian *zagónščik* vs. *pogónščik* 'driver of a team', Slovene *gonič* 'drover, beater'; Ru *vygonščik* 'beater' = *zagónščik*, but as 'rafter' it stays in the clear driving side). There is a lot of this in Slavic, cf. also Czech *honak* '(cattle-)driver', *honec* 'id.', but also 'beater' (as in *nahončí* [also 'henchman'] and *nadháněč*). German *Kesseltreiben* for battue-beating emphasizes the scaring-up part (with *din*). English *surround* takes to the formation of the beaters, and Latin *indago* comes close to it.

		CATCH			
	I bher- & ag- 'pillage' ←			MINERALS (bher-)	
Treiber	II ag- 'drive' →			ANIMALS/PEOPLE (ag-)	W
beater	III g ^w hen- 'beat' →			ANIMALS ↑ (ἀγρέω)	F
				PLANTS	

The pillage-combination has been added on top (I), to remind us of the central position of *ag- between (or in) war (W) and hunting (F for food). This activity is named after the capture part (←), the other for the activity to reach the goal, the capture (→). The catch-column includes rather clear hierarchy or structure along the lines of the guessing game where objects are classified as plants, animals, or minerals (and minerals mean here generally valuables [often of metal]). But the catch-bag favors certain blurring, of course: *ag- 'drive' seeps down to plants (☞, more on this below), and *g^when- 'beat' in its killing aspect goes all the way up as its normal semantics (☞, ↑). Note the basic German glosses of Old Icelandic *sækja*, a hunting cousin (= *seek*): 'angreifen' (→), 'gewinnen' (CATCH), and 'holen' (←).

The whole situation can be summed up neatly with Irish. *Táin*, the verbal noun of *do-aig* (with a **to-agnā* to **to-agni-* shift) is the general 'driving out, off' (I[→]←), but particularly the word for the cattle raid/plundering expedition and its genre (I←), providing also the meanings 'plunder, booty, spoils (generally of cattle)' (also Icelandic r[aj]iding *reið* gives the genre, e.g., *Sveinstaða-reið*). The general driving and games aspect of *din* somehow echoes the II → -row in the games context when it is used of driving balls into a hole. The differences between Greek and Irish, hunting (→) vs. raiding (←) and *-*rā* vs. *-*nā*, are very minor and do not affect the driving semantics and its morphology in any significant way, except for supporting it.

Raiding and bringing-home-the-bacon domain around the above diagram again combines the roots **ag-* (~ *éλε-*), **bher-*, **wegh-* (Skt *váha* 'carrying away, booty, war, battle, contest'), and **g^hhen-* (and **sāg-* is there for →) into a unified whole in a hunting and gathering culture. Of these **ag-*, **bher-* (Skt *bharaṇḍa*, *bharu*, *bhartṛ* 'lord, master'), and **sāg-* provide leader-terms.

*Killing *ag-(ro-lā)*

A closer look into the human catch-slot in the war-area (of the above diagram) reveals that it is standard wisdom to find the shapes **ag-(ro-lā)* in Celtic in battle and carnage meanings: Old Irish *ár* 'carnage' (**ag-ro-m*), Welsh *aer* 'battle' (**ag-rā*), Old Cornish *airou* pl. '[Lat] strages; massacre, carnage', and Mlr *ág* 'fight' (**ag-u-*). We find a clear spoils aspect of beating the objects to shreds (→), rather than necessarily taking anybody alive (←). The extreme carnage in the Celtic context, e.g., taking body parts as booty or souvenirs, is not unknown elsewhere in the world. Note that Lat *agere* meant, in the right context, 'to sacrifice', and *agōl-nis* was the priest who killed the victim. This is of course an action word, but in this context it is killing, slaying. The sacrificer asked the priest *agone?* 'Shall I drive [the knife in]?', and he did not do it, unless commanded with *age!* or *hoc age!* The victim was called *agōnia*, and there were festivals (*agōnālia*, *diēs agōnius*, and a deity/action *Agōnius*) and places (*agōnus*) called by similar names in Rome. As Meuli (2.907-1021) has convincingly shown, later agricultural or high-culture sacrifices derive from earlier hunting practices performed at the kill, in other words, exactly in

the catch-hatch. It is important that these meanings need not have the r-formative, the bare root will do.

Hittite ak(k)-. Sturtevant (1927) suggested ("with little doubt") that Hittite *ak(k)-* would go with Lat *agere* and thus **ag-*, as something like *vitam egi, qui tum agebat, vixit* = 'he is dead' (in other words, he has acted his life out). Note also *animam agere* 'to lie dying', obviously 'to drive [out] the spirit'. Later he retracted this because of his own law, which says that a double *-kk-* would come from a voiceless stop, and of course the semantics ('die') was not too obvious either. Now it is further clear that the 3pl. *ekir* is later than *akir*, so there is no good evidence for original ablaut *ale*. The *kk ~ k* alternation has been taken both ways, either with weakening or strengthening: e.g., Eichner's (1975:87) sound change *-gi(-) > -ki(-)* and *-ggi(-) > -kki(-)* and root shapes *h₃oh₃ók / h₃oh₃k > Hitt *āk / ākk*. Melchert (1994:62) formulates a **#ē.D(V) > Proto-Anatolian #āD.D(V)*- under which **ógei/égēti > aki/akkanzi*, and **áks* 'died' > *akkiš* (174, 180), which would produce a voiceless *k*. This last root alignment goes with Lat *egere* 'lack', i.e., **h₁eg-* (see also Mallory & Adams 1997:343). Schmitt-Brandt (1998:256-257) posits a reduplication **he-h₂k^w-*, which would probably go with Greek *λάπτω* 'damage' < **h₂ok^w- ~ *h₂ak^w- ~ *h₂ek^w- > *-ok^w- > *-ok- > Hitt *-ak-*. Note that *λάπτω* is usually taken from **h₂*, **h₂i-h₂ek^w-* (e.g., Giannakis 1997:217). This is just to show the main lines with a modern emphasis. There is no agreement, but there remains the possibility that *kk ~ k* can reflect PIE **g*. I will take this position to explore Sturtevant's root alignment with 'drive'. I will have nothing to say about V. V. Ivanov's statement (p. c.) that Hitt *ak(k)-* might be a North Caucasian borrowing, e.g., Hattic or some other not really N, but NCAus language of Asia Minor. I will argue that the general picture points rather towards inheritance. Since the Hittite root shape allows only for **h₁* and **h₂*, the uniformly standard **h₂eg-* 'drive' would have to be **h₂eg-* (with really no repercussions anywhere).**

Hittite *ak(k)-lek(k)-* is a very curious verb — and not just formally jinxed for history. Unlike PIE **mer-* 'die' ('disappear' in Hittite) it is active only, but semantically it acts as a passive to Hittite *kuen-/kun-* 'kill' (**g^hhen-*), and means rather 'to be put to death, to be sentenced to death' (cf. *φόνος* 'death as punishment' [Sophocles]; also Sanskrit *han* means 'put to death, cause to be executed, punish'). Since this also gives 'die' in context, that gets central

coverage in handbooks. The iterative *akkiskila-* (which might have contributed to the double *-kk-* spelling [**ak-ske-*]) covers the following meanings in Old Hittite (Kammenhuber 1973:I.13):

- I. man pflegt getötet zu werden (HbOr S. 220) Huqq. (Suppi. I.);
 - II. immer wieder sterben (iterative) Tunn. (14. Jh.);
 - III. für eine einheitliche Handlung, die mehrere Personen betrifft, in der Bedeutung "getötet werden" (Suppi. I.);
 - IV. für das Sterben vieler über einen längeren Zeitraum hin;
 - a) Subjekt nicht bezeichnet;
 - b) Subjekt bezeichnet durch kollektiven (oder kollektivisch aufzufassenden) Singular — so schon *aheth.* —; später auch durch Subjekt(e) im Plural.
- Typ IV a und b liegt vor in allen medialen Belegen; ... In dieser einigen Funktion sind Akt. und Med. vertauschbar.

The earlier occurrences of *ak(k)-* cover the death of either a single person or many individuals actually named, whereas *akkisket* renders the death of an anonymous city population (15). Later in Suppi. I 'to sentence to death' is the normal meaning (in the iterative always), but in Murs. II the iterative (both active and middle) is used for 'dying', and *ak(k)-* predominantly so. The participle *akkant-* 'dead, dead person, soul of a dead person, ghost' is used predicatively only. Since an intransitive verb should carry active meaning, we would expect 'dying' and not 'dead' as its meaning. Furthermore, the verbal noun *aggatar* also means only 'death', not 'dying' or 'pest(ilen)ce' (note *harsanas aggatar* "head's death" = 'capital punishment'). Kammenhuber sums the whole verb up as follows (39):

- Sprachwissenschaftlich betrachtet erweist sich *ak(k)-lek(k)-* als interessant-altertümliches idg. Vb. mit feinen Nuancen in Diathese und Aspekt und einer dadurch bedingten Defektivität; sc.
- ak(k)-lek(k)-*, nur akt. Formen:
- "sterben" (intr.-akt.) – "getötet werden" (Passiv);
- It. *akkiskila-*, (defektiv) Akt.:
- aheth.* "Subj. x war am Sterben";
- jheth.* "(Suppi. I.) "x wird getötet"; (Tunn.) "x sterben immer wieder";
- It. *akkiskila-* Med. (ab Murs. II.): "Subj. x ist am Sterben"; jüngerer Typ: "ein Sterben herrscht" (ohne Bezeichnung des Subj.). – Älter nur 3.Sg.Prs., Prt.; jung selten auch 3.Pl.Prs.
- Sup. *akkiskiwan* "Subj. x fängt an zu sterben".
- Ptz., Verbalsubst. "gestorben, tot" resp. "(der) Tod".

The verbal noun *aggatar* is different from *henkan* and *harga(-tar)*, although later much overlapping develops. Note that a 'lot' meaning comes out in the frequent *idalu henkan* 'bad lot', never *idalu aggatar**.

The peculiarities of this Hittite verb are compatible with an original *ag-* 'drive' in roughly an **ag-r-o-la* context, which comes close to ritual killing. As Meuli has shown, there is a world-wide conception of death as murder and killing. The Hittite euphemism 'die in multitude' refers to enemies put to death, and thus reflects where prey is clubbed to death. The Celtic meanings of 'carnage, massacre, slaughter' match Hittite quite well, because also here we have connotations of multitudes or crowds (the unique semantic profile of OIc *drífa* includes also 'to rush in crowds' [cf. *in droves*]). *Harsanas aggatar* (although late) would now translate directly into the corresponding Finnish *pään ajo* (cf. Sanskrit ppp. *hatá* 'struck off (as a head)' < **g^wh₁tó-*), which does not sound too bad at all. Sentencing to death is typically a social group activity like the driving of animals into the pits, and their ritual killing therein (cf. φέρω καὶ ἄγω 'pillage'). This again works well with Meuli's ideas and explains the Hittite grammatical quirks. Note further that this is not really killing in the original hunting situation, it was just gathering food, and the victims were "sentenced to a detour" in the cycle of life. Something like that must be assumed as the starting point, although also Hittite has shifted way out of it. Kammenhuber (33) points out that *ak(k)-* would not mean 'to kill or slaughter animals', at best only 'to punish with death'.

*Beating and killing *g^when- (beyond Hittite)*

It is not surprising that 'beat' can develop into 'beat to death', as on the whole happened to **g^when-* in Indo-European. A good parallel comes from Russian *bít'boj-* 'beat; combat, battle': *bítva* 'battle, combat', *boj* 'battle, fight', and *razbój* 'robbery, piracy', but also with preverbs, *dobít'* 'kill, finish', and even stronger with *iz-*, *po-*, and *u-* 'massacre, kill, murder' (*izbiénie* 'beating, massacre'). The hitting and throwing root, **g^welh₁-* (βαλ-/βλη-/βελε-), gives another good parallel in English *quell/kill*.

There is not much reason to discuss the beating-to-killing **g^when-* in the various branches, as it has recently been summed up by García-Ramón

(1998), and much has been given by Watkins (particularly 1995). So let a short reminder suffice: Strong(ish) killing meanings result in Greek, Indo-Iranian, Celtic, and Germanic. In addition, beating gives sticks and weapons of all kinds, and such terms exist even in Baltic, where the driving meaning predominates. Beating somebody off is defending oneself, and Latin and Balto-Slavic remain at that stage. The Irish Academy Dictionary points out for *gonaid* that “*pierces, wounds* passing into sense *kills* (the precise meaning is not always easily ascertained)”, but this wounding aspect is strong, beating as such is just implied in that (*guinech* ‘wound-dealing’, *guinige* ‘inflicting of wounds’, *guinid* ‘killer’). Like Skt *han*, *gonaid* also expresses loss and damage, in the waning of the moon: *ruithnedh an éusga an úair ghontar* ‘only the light of the waning moon’, and for the noun *guin* ‘(the act of) wound(ing)’ (**gʷhonis*; Cowgill 1980:62 thinks also **gʷhenis* possible), as *i an med sin dorcaidter don cuid soir de ar a guin* ‘that is the measure of the darkening of the eastern (front?) side of the moon by its *guin*’. The wind bears *gen* against someone; this seems to be “raw wind”, apparently metaphorical from *gen* ‘sword’ (**gʷhena* [cf. Skt lexicographic *hani* ‘a weapon’ < **gʷheni*-?]; cf. Latvian *dženuls* ‘point of needle’). *Gonas* is ‘killer’, *gono* ‘I wound’, and *doḡét* ‘violated’ (García-Ramón 1998:141, 145-146). Formally the **gʷhṇ-V* > **gwan-* (W *gwanu* ‘to stab’) > *gon-* takes over the Irish verb (cf. Cowgill 1980:55, 60-62).

For oldest Germanic one can note **gunþjō* ‘battle, war’ (Oic *gunnr*, OE *gūð*), and particularly **banōn* ‘murderer’ (OE *bana* > *bane*), **banjō* ‘wound’ (Go *banja*, Oic *ben*); perhaps also **gandaz* ‘stick’ (Oic *gandr*) and other more questionable material (Seebold 1980:439, 443, 477).

*Non-killing *gʷhen-*

Gathering. We have seen that **ag-* designates hunting, fishing, seizing, and even killing in quite a number of contexts. Balto-Slavic and Albanian lose it and assign also the general driving meaning (‘drive’) to the root **gʷhen-*, if **wegh-* does not do the work. In Balto-Slavic the driving **gʷhen-* is overwhelmingly tied to meanings of general driving, racing, driving after or striving (note even a maritime beating situation like *korábl gónit k véttru* ‘the ship strives into the wind’), transporting, floating, driving away, and from

that: persecuting, oppressing/plaguing, reprimanding. Beating still goes nicely with hunting. The real death meanings come only with extreme forced beating (*zagnát' skvoz' stroj* "to drive through the [battle-]line" = 'to beat to death in a gauntlet') or oppression to the end (*zagnát' so svéta* "drive from the light/world" = 'make perish through oppression', *sgonját'* 'through persecution, drive somebody to his grave'). Such readings do not change the overall picture that *gnar'* is beating and driving, not killing.

Both **ag-* and **g^when-* hark back to Paleo- or Neolithic times, i.e., to hunting and gathering, where both aspects fall under beating, whether battue-beating or throwing together nuts and berries. When such an economy shifts to agriculture, old terms can be carried over, and normally would be carried over. Against this background it is easy to understand how the Slavic e-grade **žen-* 'to reap' has been lexicalized into an independent root, as it still nicely reflects non-hunting beating, whereas *gonobít'*, (*s*)*gonošít'*, *výgonošít'* 'gather, save in small amounts, amass, store up, do hastily', with a general throwing together feeling, reflect a more pronounced driving semantics (cf. Icelandic *akka* 'to throw together', obviously an "unexplained" (-*kk-*) variant of *aka* 'drive'. This context is conducive to preservation of any goods acquired (*žátva* 'storage', in addition to 'crops, grain', and even 'gain, profit' [reached also by *výgon*]; *žnlva* 'stubble-field, crops'; cf. Mägiste's [1977] idea that Finnish *aitta* 'granary' < **ajitta* ~ *aja-* 'drive'). Parallels are easy to find, cf. Swedish *slå hö* 'to mow' [beat hay] (cf. *slegin tún* above) and Finnish *tappaa riitää* 'thresh' (beat the *riihi* [threshing barn]); today *tappaa* is in all other contexts 'kill', and thus provides a perfect parallel to **g^when-*; note further Vedic *han* with *áva* and *práti* as 'thresh'). German *schlagen* designates the cutting of trees (giant hay!).

As with the descendants of PIE *ak-* 'sharp', which bear witness to Stone Age technology, we might have a similar situation in **g^when-* pointing to stone-age economy. In a hunting and gathering situation, abundance and riches and life itself is food, what you are able to beat together. Fick did make the proposal (approved by Bechtel) that ἄφενος 'riches, abundance' would essentially be **sm^w-g^whenos*, going nicely with εὐθενέω 'thrive, flourish' (~ εὐθηνέω). It seems that the general idea ever since has been that the root meaning here would be 'swell', rather than **'beating together'*, duly considered by Szemerényi (1964:144-6; I let this serve as the basic locus for references), who reminds us that φόνος αἵματος 'blood clot' must belong here. But it is quite dubious (as is usual in our handbooks) to keep a root

'swell' and one for 'beat' separate (both **g^when-*). Thus Skt *āhandś* 'swelling' can quite well be (**)*'heranschlagend' (cf. German *Ausschlag*), with *ā* 'near (to), toward' not that far from **som-*. With *abhi+ā+han* we get 'beat, kill'. We would actually like more information on *āhandś*, but it is clear that its meaning is something like 'lascivious' (and not necessarily mere priapic extension as such), and the term refers to copulation (and from this one gets the *āhanasyās*, obscene "copulation verses"). How much swelling is necessary cannot be determined, since the reading could also be metaphoric from *ā+han* 'to stick (the axle) in (the wheel), to beat/pound violently'. Yama accuses his sister Yamī of this lewdness (this is the couple that launches mankind; cf. Gamkrelidze & Ivanov 1995:680-681), which does not seem to fit the axle fitting, because scholars have looked at it only from the axle end. But the action is "identical" (for both men and women) when looked at from the wheel perspective! On the other hand, note that in Modern English *horny* refers also to women, and in Black English women have a *cock*.

Szemerényi finds an s-stem compound noun **sṇi-g^when-es-* a "wholly artificial construct", and also unacceptable for phonetic development. The phonetic problem is apparently the labial for the expected dental, but this is not that big a difficulty, as Greek is full of levelings in this domain. A parallel would be Lat *extemplō* 'immediately, quickly, forthwith' < **d^un coup, auf einem Schlag* (Maher 1978:477). The verbs εὐθενέω and εὐθηνέω are obviously denominative, but it is not certain that they are from the s-stem **-θευ-εσ-*, and in any case there is a different prefix. This might in fact be quite significant, if we can determine a concrete beginning for the prefix. Particularly in a stone-age conception, life and riches are one and the same thing. Koivulehto (1991:36-44) draws our attention to this again by treating harvest words from the root shape **os-*, o-grade of 'to be', **es-*. He also points out the Finnish parallel of *elo* 'harvest; goods, property' from *elää* 'to live'. Goods is also the outcome of the other 'be' root, **wesu* > Skt *vasu* (cf. *was/Wesen*). Koivulehto further presents Finnish and Permian developments of PIE **h₁esu-* (Skt *dsu*, Greek *έύς*) in **kese* 'gut, tüchtig, passend; Freund, Gatte' (Lat *erūs* 'master', Old Latin *esa* 'mistress'). When we now take this noun as a possible component of the compound, i.e. **h₁(e)su-g^when-*, we might indeed have one of the original contexts of the Greek prefix. This would be something like **'beating out sustenance (= life)'*, putting it together, in other words, 'abundance and riches'. In this context φερέσβιος 'life-bearing,

life-giving, nourishing [earth]' would be another good portrait of this kind of semantics. Tautology of this kind is a strong indication of the original meaning; it is parallel to compounds like *lemon-yellow*. *Αφενος < *sm-g^when-os would share the same semantic field as *h₁(e)su-g^when-. We would actually not know when the s-stem was formed, because it would have been easily possible after the compound had faded, or the boundary was blurred (at least the s-stem has the right PIE vocalism here, and does not sport just any vowel, as became the ultimate Greek situation). As for the compound, this is exactly what we saw in Russian (*s)gonošit'*, even with or without *s(o)m-, in exactly the right home economy reading. Skt *sam+han*, in addition to the regular 'killing' and 'destruction readings', means something like *sam+dha*, 'joining, putting together, beating together, making compact'. Note particularly *saṃhati* 'keeping together, saving, economy; bulk, heap, multitude' (*som-g^wh₁-ti-, close to -φασσα; see below). The semantic field involved can be strengthened from Vedic, through *vrj* 'twist off, pluck, break somebody's neck'. This is the root apparently cognate with German *werfen* 'throw' (cf. *warp* and *woof*), and note that *han* covers such a meaning with *ā* (on which more below), *ud*, and *ni*. But particularly in the context of sacrificial grass *vrj* means 'gather', and generally 'choose for oneself, select', and *sam+vrj* 'lay hold of, seize for oneself, appropriate, own' (which comes quite close to ἀφενος), i.e. to throw booty together, and the nominal forms echo this: *saṃvargá* 'rapacious, gathering for oneself' (~ *saṃvārgam*, *saṃvārjana*). (The importance of the original Proto-(and Pre-)Indo-European nature religion also comes out well in Haudry [1987] for the Hera cluster and gives strong background and support for the Demeter/Persephone aspects below; nature and plants in the original hunting and gathering culture shimmer also in Greek sports [Sansone 1988].)

Sexual union and nourishment. The swelling meaning is there, but it is a natural outcome of driving/beating. Grassmann's dictionary lists *sam+han* as a milking term (which would fit a milk and honey metaphor), but the passage actually goes (RV 8.31.9):

vītihoṭrā kṛtádvasū
 daśasyāntāmftāya kām
 sám ūdho romaśām hato
 devéṣu kṛṇuto dúvaḥ.

Geldner: "Opfereifrig, Schätze sammelnd, dem Unsterblichen willfahrend drücken sie das behaarte Euter fest zusammen. Sie tun ihre Schuldigkeit gegen die Götter."

Milking is suspect already on account of the fact that the udder is not that hairy. Line c *sám údho romaśám ható* goes literally 'they press together the udder and the hairy one' (and with this they do their duty to the gods). Here we have metaphors for the female and the male genitals, and these could have been formed any time (the "modern" mind puts the hair on the other sex [pussy] and does not see the equivalent location of the udder and the female parts; and depilation of women would keep the men hairy by contrast). The result (of "beating [it] together") is of course children who in their time uphold the prosperity of the community and secure worshippers for the gods, etc., but there is no unambiguous original prosperity meaning here. On the other hand, good being/life is working together, good union. And good union can be many things indeed. Koivulehto quotes (from the **hesu* side) from Finnish dialects *kesy* 'wer sich allzu leicht mit dem anderen Geschlecht vertraulich macht' (1991:40) and *kesu flikka* 'ein Mädchen, das den Jungen willig ist' (43) (note: *Geschlecht* is cognate with *schlagen* ~ *slay*!).

*Αφενος agrees with the hunting-and-gathering starting-point in that it reflects the cattle-raising and agrarian counterparts (as do εὐθενέω and εὐθηνέω; cf. Bader 1976:26, 1978:117, 210)). In Homeric the meaning is tied to grain and cattle, i.e. plants and animals as concrete riches rather than abstract richness. The adjective ἀφνειός refers to individuals and their houses, not cities, which seems to indicate that originally it was a good beater that was "rich" (and his possessions were kept in his house), and that beating it together for the common good was on a different level. Πολυφόντης would be such a rich or well-to-do individual, but names are indeterminate. Even if in Ἀργεῖφόντης we have killing in the second part, it need not be true for the starting point of the former. (*Αφενος goes into names in Thessaly, e.g. Τιμαφένης [Szemerényi 1964:144].) The adjective ἀφνειός is the epithet of Ares in Arcadia, in the meaning of 'the nurturing one' (cf. Umbrian *Çerfus* Martius 'vegetative growth in the sphere of Mars'), almost like Sanskrit *-bhāra* 'supporting' (and with passive meaning: *bhāryā* 'to be nourished or cherished', *bharita* 'nourished') in the 'carry' > 'fertile' context, but then also

'war, booty, battle' in the φέρω καὶ ἄγω situations. In any case, war is a kind of sustenance for a warrior society (cf. also Haudry 1993:188). Note that Çerfus Martius is about the same as Ares Aphneios, there is just a reversal in the the head and attribute hierarchy. The fact that the god of creation in India, Brahmā, is called *ajana* [driver] 'the instigator' is at least strong typological support, even if direct inheritance cannot be proven.

Practically all words in the nature-gain-crops domain can develop into profit/prosperity aspects. The handbooks today keep -φεν- and -θεν-/ -θην- apart, but there is no good reason for it. Of course the latter look the same as Lat *fecundus* - *felix* - *fēmina* - *fētus*, and these are taken under **dhē-*. In between fall further *fēnus/-oris* 'interest, gain, profit' and *fēnum* 'hay', again with an ambiguous -*n-* (going with the root or the suffix?). Fick analyzed the latter as **fend-snom* 'abgemähtes' (cf. *dē-fend-ere* *'beat off', i.e., the attested 'defend', in a concrete situation with arms, or camps, and also in front of judges), and in this context it again becomes quite attractive. (*Offendere* is bumping against somebody without intent, with words or behavior, and gives thus 'hurt'.)

Formally, an s-stem is not that unique after all, if one considers Latin *Venus*, in which the stem type remains even after it has been personified as a goddess with female grammatical gender. Here we have another parallel to the material under discussion, since **wen-* is perhaps an original hunting term with some ties to plants and it gives an incredibly rich gamut of meanings of joy and lust (cf. Hittite *wenzi* 'fucks', or perhaps just 'seduces', German *Wonne* 'love', *Gewinn*, *Gewinst* 'profit', and note particularly Gothic *winja* 'pastur[ag]e, fodder'). On the other hand, Seebold makes a case for taking **wenjō* from **g^hhen-* on the semantic strength of Lithuanian *ganyklà* 'pasture' and *giñti* 'drive' (1980:439, 465). Such a "beating ground" would fit in nicely with ἄγρός/ἄγρᾱ, and **wanja-* > *wen* would not be a problem either (439, 468), although for Seebold there seem to be three homophonous roots, 'beat, slay', 'thrive', and 'swell'. I argue that they are environmental readings of the same starting point in Stone Age culture.

Murder, slaughter, and blood are meanings (of e.g. φόνος) that easily result from the battue-beating context, or the hunting aspect. The problem is, and has been, the gathering (or the later agricultural) aspect which has left only vague remnants. If we assume that the action meaning shifts to the result of the action (as is quite common) we will get a rather natural solution for the long-

standing problem of the name of Persephone. There are quite a number of forms, e.g. Περσεφόνηα, -φόνη, -φασσα/-φαττα (and more; see Petersmann 1986), not to speak of the problems of the first part (Φερσε-/Φερρε-, with an aspirated initial). We have to take the endings as **g^whon-es-ya*, **g^whona*, and **g^wh₂tya* (> OIc *gunnr* 'battle' [ultimately the source of *gun*]), with either beating or swelling meaning. The initial has been mostly connected with πέρθω 'waste, ravage', but Fraenkel found here an s-aorist of φέρω: Φερσε-, which is not otherwise attested in Greek (but cf. Skt *abhārṣti*, *abhāriṣam*, *bharṣati*). Such semantics is mirrored in Hesychius' ἡ φέρουσα τὸ ἀφενός 'the one [earth] carrying riches'.

Persephone. There is general agreement that the Demeter/Persephone complex contains much from the pre-Greek culture, but such a situation need not mean that the name itself could not in essence be inherited from Proto-Indo-European or pre-Greek. The whole situation is admirably portrayed in Petersmann (1986), who ties it all in with Oriental parallels and Greek religion. The main aspect that arises is that Persephone was originally a sun goddess. Since the sun does go down (into the earth or the sea) at night to rest, sun goddesses are at the same time earth and underworld goddesses, and when the yearly cycle is added, nature and harvest aspects get included. Fire as an index of both light and warmth substitutes easily for the sun in nightly rituals, and so on, and springs as entrances to the underworld (also caves) and as life supports become obvious cult sites. Petersmann takes up the old(er) idea that the names Perse(s), Perseus, and Persephone go together. These names are closely connected with the sun in Greek myths, but Petersmann can quote Lycophron (iii B.C.) as actually using a word πέρρα for 'sun' (the Persian arrows καλῖλει πέρραν). He can now assume that there was an Aegean word **πέρσα*, whose original meaning was apparently 'fire, light', and this is then combined with the 'swell' -root to produce the name of Persephone with the basic meaning 'the one full of fire/light, exuding fire (die von Feuer, Licht Übervolle)'. Such an interpretation works fine for the attested usages in early and later Greek, but is this necessarily the starting point? Do we not get a better reading by taking the last part as 'produce'? Note that φορά is also 'produce, crop, fruit' (cf. *Ertrag*). It would seem that this was originally what nature carried and put forth, and ἀφενός what man was able to throw together (**φονά*; cf. Russian *výgon* 'gain, profit'), although in the name of the goddess

(and elsewhere) this distinction is gone. I suggest that a personified 'sun's produce' gives us the simplest solution as the starting point.

It is true that today the destruction (Περσε-) and death/killing (φονή) interpretations predominate. Thus Bader (1989:38), pushing a 'warrior initiation' reading for *g^when- (34), interprets Persephone as clearly being 'who destroys death' or 'who kills destruction', i.e., with the compound read either way, as if Petersmann's contribution had no value.

In the yearly cycle Persephone has to spend about a third of the year in the underworld to produce every year the great wonder of her return upstairs, wonder to both gods and men. This central fact is not easy to interpret, witness Burkert (1985:160):

Since antiquity, this myth has been understood as a piece of transparent nature allegory: Kore [= Persephone] is the corn which must descend into the earth so that from seeming death new fruit may germinate; her ascent is the seasonal return of the corn, 'when the earth blooms with spring flowers'. For all that, this account does not accord with the pattern of the growth in Mediterranean lands, where the corn germinates a few weeks after the autumn sowing and then grows continuously. For this reason, Cornford and Nilsson proposed an alternative construction of the myth: Kore's descent into the underworld is the storing of the seed-corn in underground silos during the dry summer months when, in Mediterranean climate, all vegetation is threatened with desiccation. At the time of the first autumn rains, some four months after the harvest, the seeds are taken from the subterranean keep, Kore returns, and the cycle of vegetation begins anew. This undoubtedly fits the facts much better, but the Greeks did not understand the myth in this way; we are taken back to pre-Greek, perhaps neolithic times.

Indeed, and furthermore, those are the times we are interested in! Demeter and Persephone swap epithets, as mothers and daughters do with clothing, and one of them is Demeter's θεσμοφόρος 'law-giving' (earliest in Herodotus), in fact, both are called τῷ θεσμοφόρῳ (Aristophanes) and αἱ θεσμοφόροι, and Pindar calls Persephone πότνια θεσμοφόρος (the epithet is assigned to Dionysos in the Orphic tradition). The question is, and it must remain a question, is there a vestige of that pre-Greek possibility in interpreting the compound as containing Anacreon's (earlier than Herodotus!) θεσμός = θησαυρός, which would now provide a storage aspect (supported by Hsch. θεσμοί · συνθέσεις τῶν ξύλων 'stacked-up wood?'). When we also take the ending with the reading

suggested above, the epithet could have gone, originally, something like 'storage-crops': Demeter of the Stored Crops, Demeter of the Granary. This is part of the order of life, as is more strongly, although more abstractly, there in θεσμός as law. Hera surpassed Demeter as a family or social-order goddess, and Dionysos is not connected with any kind of order at all, just wine, intoxication, pell-mell, and madness (cf. Burkert 1985:161-167). Wine would at least belong to Demeter's cellars. The evidence here is not too solid, since we have a hapax, and it is further aggravated by θεσμός and νόμος, two law words, occurring in subsequent lines (Symp. hemi. 2/2b):

Δότε μοι λύρην Ὀμήρου	ὑπὸ σῶφρονος δὲ λύσσης
φονίης ἀνευθε χορδῆς ·	μετὰ βαρβίτων αἰείδων
φέρε μοι κύπελλα θεσμών,	τὸ παροίνιον βοήσω ·
φέρε μοι νόμους κεράσσας,	δότε μοι λύρην Ὀμήρου
μεθύων ὅπως χορεύσω,	φονίης ἀνευθε χορδῆς.

'Give me Homer's lyre, without a string of murder; bring me cups from the storage-rooms, having mixed [them] bring me melodies, so that drunken I will dance a choral dance, under wise madness singing with *barbitoi* I will shout the wine-encounter; give me Homer's lyre, without a string of murder.'

But the evidence is not too bad either; and the translation should go something like that. The poet points out that he would avoid the killing chords of Homer's epic, although he asks for epic lyre melodies; in line 4 the mixing word is a civilized wine treatment and consumption term (with two verbs sharing the object; the cutting of wine would of course rather have the singular, οἶνον κεράσαι). The whole thing is drinking and being boisterously merry. No laws enter. A storage idea is still a good possibility. In fact, the use of these two words is probably intentional punning, a reversal of the social order the words would primarily convey, thus in a way establishing a Dionysian order. The words at the line seam 3/4 could hint at the later θεσμοφόρος.

Note that practically all of the authorities take Latin Consus (god of the granary) from *condere* 'to store' (i.e., the same **dhə-* as in θε-; see Radke 1965:18, 21-22), who was closely connected with Ops (Abundance, Harvest [cf. ἀφειός], with her festivals Opiconsiva and Opalia, and epithet *opifera* [cf. Opifera, Radke 1965:12]), and other harvest aspects as deities, e.g., Ceres

(closest in function to Demeter and Kore) and Terra/Tellus. Consus had his altar in an underground facility over which the Circus Maximus was later built, and, indeed, the oldest way of storing grain and produce was underground. The $\theta\epsilon\sigma$ - (**dhə,s-*) as in $\theta\epsilon\sigma\mu\acute{o}\varsigma$ might have a direct counterpart in the Sanskrit name *Dhiśāna* of a deity presiding over wealth and gain (**dhə,s-eno-*). Keany (1991:207-208) interprets Consus as **kom-d-yo-s* (with the same preverb and root) through a Sabine sound law *-dy- > -[z]-, which fits perfectly into the contextual knowledge we have of the Consualia. This would agree with many other Latin/Italic deity names with *-yo-.

Beating parallels. It is important to emphasize once more that many of the swelling meanings are just variants of beating, as is so clear in Sanskrit *han* 'smite, strike, pound, hammer, hurt', etc. Consider also the noun *ghanā* 'killer', but as adj. 'compact, solid, hard, firm, thick', in compounds 'full of', where we also see the line from beating or packing up to being full or thick. Pre-Slavic **gon-stos* (or rather, at least for Balto-Slavic, **gon-stus*, under the weight of Orr 1996) would also give Slavic 'dense, thick' in Russian *gustój*, Czech *hustý*, and Polish *gęsty*: Russian *gústo zamesít' tésto* 'mix stiff dough', *gustój les* 'thick forest'. Another Russian beating word gives something similar: *bit'* [beat on/at] 'fill, pack, stuff', *bítij čas* [beaten hour] 'full hour', *bitkóm nabítij* [beaten with a club] 'crowded'.

Sanskrit *ghanā* as **g^when-o-s* is close to the corresponding feminine **g^whonā* in Greek. This kind of "adjectival" radical e-grade is common enough, even in nouns: **h₂egos* 'leader', **ekwos* 'horse', **servos* 'shepherd' > 'slave', and Lat *-fera* above (cf. the accent in *bhāra* 'bearing, booty'). The o-grade would show Brugmann's Law, and thus we have a root-initial generalization of the non-palatal *gh-*. Generally for this root *h-* predominates, e.g. *vīrahana* '[man]killing, slaughter'. Sanskrit morphology also richly matches the Greek zero grades.

It is of course true that basic terms go into new metaphors and contexts, cf. *to throw together* *up a log cabin*, Swedish *slå ihop* 'put [= hit, beat] together (e.g. income)', or Finnish *lyö-dä leiv-i-lle* (beat-INF. bread-PL-ALLAT.) 'will do, is worth while, sufficient for sustenance', etc., and thus all such features need not be inherited. But it seems that in this case (of hitting nature for food, in a tight religious fold) the most obvious semantic possibilities have not been sufficiently considered. When we imagine or ἀναγινώσκωμεν an early

hunting and gathering culture, and include the later cattle-breeding society, we get a fairly coherent picture of the semantics involved, and its connection with the roots *ag-, *g^when-, and *bher- (fertile, OHG *unbāri* 'unfertile').

(This piece is a shorter version of chapter 6 of my book on the Proto-Indo-European root *ag-, soon to be published by John Benjamins, Amsterdam & Philadelphia.)

References

- Bader, Françoise. 1976. "Noms de bergers de la racine *pā-", *Studies in Greek, Italic and Indo-European linguistics offered to L. R. Palmer* 17-27. Innsbruck: Institut für Sprachwissenschaft.
- . 1978. "De 'protéger' au 'razzier' au néolithique indoeuropéen: phraséologie, étymologie, civilisation", *BSL* 73.103-219.
- . 1989. *La langue des dieux, ou l'hermétisme des poètes indo-européens*. Pisa: Giardini.
- Benveniste, Émile. 1973. *Indo-European language and society*. Coral Gables: Univ. of Miami Press.
- Buchholz, Hans-Günter. 1973. *Jagd und Fischfang*. *Archaeologia Homerica* 2, J. Göttingen: Vandenhoeck & Ruprecht.
- Burkert, Walter. 1985. *Greek religion* (transl. by John Raffan). Cambridge, MA: Harvard Univ. Press.
- Chantraine, Pierre. 1956. *Études sur le vocabulaire grec*. Paris: Klincksieck.
- Cowgill, Warren. 1979. "Agōn : agefrō: A new r/n-alternation", *Festschrift for Archibald Hill* 3.29-32. The Hague: Mouton.
- . 1980. "The etymology of Irish *guidid* and the outcome of *g^wh in Celtic". *Lautgeschichte und Etymologie* (ed. by Manfred Mayrhofer et al.) 49-78. Wiesbaden: Reichert.
- Eichner, Heiner. 1975. "Die Vorgeschichte des hethitischen Verbalsystems", *Hethitisch und Indogermanisch* (Erich Neu and Wolfgang Meid, eds.) 71-103. Innsbruck: Institut für Sprachwissenschaft.
- Gamkrelidze, Thomas V., & Vyačeslav V. Ivanov 1995. *Indo-European and the Indo-Europeans*. Berlin & New York: Mouton de Gruyter.

- García-Ramón, J. L. 1998. "Indogermanisch *g^hen- '(wiederholt) schlagen', 'töten'", *Mit curad: Studies in honor of Calvert Watkins* (Jay Jasanoff, et al., eds.) 139-154. Innsbruck: Institut für Sprachwissenschaft.
- Giannakis, Georgios K. 1997. *Studies in the syntax and semantics of the reduplicated presents of Homeric Greek and Indo-European*. Innsbruck: Institut für Sprachwissenschaft.
- Haudry, Jean. 1987. *La religion cosmique des Indo-Européens*. Milano & Paris: Archè.
- . 1993. "Altindisch *ar-*, griechisch *ἐρι-, ἐρι-, ἀρι-* und der Gott *Aryaman*", *Indogermanica et Italica* (Gerhard Meiser, et al., eds.) 169-189. Innsbruck: Institut für Sprachwissenschaft.
- Kammenhuber, Annelies. 1973. *Materialien zu einem hethitischen Thesaurus*. Heidelberg: Winter.
- Keany, Anne M. 1991. "Three Sabine nomina: *Clausus*, *Cōnsus*, **Fisus*", *Glotta* 69.202-214.
- Koivulehto, Jorma. 1991. *Uralische Evidenz für die Laryngaltheorie*. Vienna: Austrian Academy of Sciences.
- Leukart, Alex. 1975. "Zur Herkunft der griechischen Nomina vom Typus *ἀγρότης, οἰκέτης* und *περι-κτίτης, κυν-ηγέτης*", *Flexion und Wortbildung* (Helmut Rix, ed.) 175-191. Wiesbaden: Reichelt.
- . 1994. *Die frühgriechischen Nomina auf -tās und -ās. Untersuchungen zu ihrer Herkunft und Ausbreitung (unter Vergleich mit den Nomina auf -eús)*. Vienna: Austrian Academy of Sciences.
- Mägiste, Julius. 1977. "Zu einigen baltischen Lehnwörtern in den ostseefinnischen Sprachen: 1. Estn. *ait*, fi. *aitta* usw. 'Vorratshaus, -häuschen, Klete'?", *Studies in Finno-Ugric linguistics in honor of Alo Raun* (Denis Sinor, ed.) 155-157. Bloomington: Indiana Univ. Press.
- Magne, Augusto, 1952-. *Dicionário etimológico da língua latina: Famílias de palavras e derivações vernáculas*. Rio de Janeiro: Instituto Nacional do Livro.
- Maher, J. Peter. 1978. "'Stone', 'hammer', and 'heaven' in Indo-European language and cosmology", *Approaches to language: Anthropological issues* (Wm C. McCormack and Stephen A. Wurm, eds.) 457-482. The Hague & Paris: Mouton.
- Mallory, James P., & D. Q. Adams (eds.). 1997. *Encyclopedia of Indo-European culture*. London & Chicago: Fitzroy Dearborn Publishers.

- McKenzie, Roderick. 1921. "Graeca", *CQ* 15.44-48, 186-188.
- Melchert, H. Craig. 1994. *Anatolian historical phonology*. Amsterdam & Atlanta, GA: Rodopi.
- Meuli, Karl. 1975. *Gesammelte Schriften*. 2 vols. Basel: Schwabe.
- Meyer, Leo. 1901-1902. *Handbuch der griechischen Etymologie* I-IV. Leipzig: Hirzel.
- Orr, Robert. 1996. "Again the *ǵ-Stems in Common Slavic". *Journal of Slavic Linguistics* 4.312-343.
- Petersmann, Hubert. 1986. "Persephone im Lichte des altorientalischen Mythos: Eine etymologisch-religionsgeschichtliche Untersuchung", *Die Sprache* 32.286-307.
- Radke, Gerhard. 1965. *Die Götter Altitaliens*. Münster: Aschendorff.
- Sansone, David. 1988. *Greek athletics and the genesis of sports*. Berkeley, etc.: Univ. of California Press.
- Schmidt, J. H. Heinrich. 1876-86. *Synonymik der griechischen Sprache*. Leipzig: Teubner; Amsterdam: Hakkert 1967.
- Schmitt-Brandt, Robert. 1998. *Einführung in die Indogermanistik*. Tübingen & Basel: Francke.
- Seebold, Elmar. 1980. "Etymologie und Lautgesetz". *Lautgeschichte und Etymologie*, pp. 431-484 (see under Cowgill 1980).
- Sturtevant, Edgar H. 1927. "The e-perfect in Hittite", *Lg* 3.161-168.
- Schwyzer, Eduard. 1938. *Griechische Grammatik*. Vol. 1. Munich: Beck.
- Szemerényi, Oswald J. L. 1964. *Syncope in Greek and Indo-European and the nature of Indo-European accent*. Naples: Istituto Universitario Orientale.
- Thieme, Paul. 1964. "The comparative method in historical linguistics", *Language in culture and society* (Dell Hymes, ed.) 585-598. New York: Harper & Row.
- Vendryes, Joseph. 1938. "A propos du verbe ἀρπείν 'prendre' ", *Annales de l'Institut de Philologie et d'Histoire Orientales et Slaves* 4.331-334.
- Watkins, Calvert. 1995. *How to kill a dragon: Aspects of Indo-European poetics*. New York & Oxford: Oxford Univ. Press.

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After the discovery of the large Hurrian-Hittite bilingual text K Bo XXXIII¹ and some other recent results of excavations, it has become possible to enrich the Hurro-Northern Caucasian comparison inaugurated by the late I. M. Diakonoff² and continued by him together with S. A. Starostin.³ The latter recently found many new and persuasive etymologies connected with the new data.⁴ Some additions may be suggested in connection not only with Northern Caucasian but also with problems bearing on Indo-European.

An old idea (already expressed by such great scholars as Hrozný in his first pioneering works on Hittite, and later by Pedersen) on possible Indo-European elements in Hurro-Urartian⁵ had been studied before the present-day revival of Northern Caucasian comparison. The question of the possible genetic connections of all these linguistic groups as well as of the links between them and Kartvelian was discussed at length by G. V. Dzhaugian.⁶ Although Dzhaugian's ideas were not approved by other specialists, the possibility of old (cultural) borrowing uniting Hurro-Urartian to Indo-European has been admitted.⁷ A definite advance in this field was also connected with using the new results of the Northern Caucasian

* This paper is dedicated to the memory of Igor Mixajlovič Djakonov (1915-1999), a great Orientalist and the founder of comparative Hurro-Northern Caucasian studies.

¹ Cf. the study of Neu 1996 with further bibliographical references.

² Diakonoff 1967, 165; 1971, 157-171; 1978; 1980, 103.

³ Diakonoff and Starostin 1986; 1988.

⁴ Starostin 1995a; 1998.

⁵ Hrozný 1916, 27, n.3 (the idea of a possible Indo-European or Hittite influence on the Hurro-Urartian Nominative-Ergative in *-š/še*, discussed later by Pedersen); Diakonoff 1980, 104.

⁶ Dzhaugian 1963; 1967.

⁷ Gamkrelidze and Ivanov 1984/1995; Xachikian 1985a, 53-54.

reconstruction⁸, although the direction of borrowing in many cases has remained controversial.

A comparable choice between several alternatives exists in the field of Etruscan. Starting with Thomsen⁹, whose remarks are still valid, several scholars have tried to show the importance of (Northern) Caucasian for Etruscan studies. Interesting ideas both on Etruscan and Urartian in their relations to Northern Caucasian were expressed by A. Gleye¹⁰, which might also be considered precursors to recent Kartvelian-Indo-European areal studies.¹¹ Unfortunately, this trend of research did not bring success in the early attempts to study both Urartian¹² and Etruscan¹³. Despite Marr's unusual linguistic knowledge and intuition, these works had suffered from the lack of regular correspondences and mixture of data from Northern Caucasian, which was later proved to be cognate with Hurro-Urartian and possibly Etruscan, and Kartvelian¹⁴, which shared many vocabulary items with Northern Caucasian and had several typological similarities with these languages but is still considered as belonging to a different (Nostratic) macro-family, within which its correspondences to Indo-European seemed particularly impressive. As a partial reaction to these attempts, several scholars have tried to find possible relations between Etruscan and Indo-European, particularly Anatolian and Greek.¹⁵ Hurrian, which is related to Urartian and seems structurally similar to Etruscan, has given impetus to new research in the

⁸ Starostin 1988.

⁹ Thomsen 1899.

¹⁰ Gleye 1905.

¹¹ Klimov 1994, 8-9 with references to the other works by Gleye.

¹² See particularly Meshchaninov 1935 with a bibliography of his own earlier and Marr's works; Marr 1922; 1933 (with a list of his publications).

¹³ Cf. Marr's published and mainly more important unpublished works enumerated in Kharsekin 1960, 488-490, Bogaevskij 1933, also Marr unpublished, and Trombetti 1928. See on Trombetti M. Ia. Nemirovskij 1930.

¹⁴ See also Gordeziani 1980. Typological parallels between Urartian and Kartvelian were investigated in Meshchaninov 1962, 54-72. Recently, the genetic relationship between Hurro-Urartian and Kartvelian has turned into a subject of vivid polemics particularly between G. Steiner and I. M. Diakonoff.

¹⁵ Georgiev 1943; 1962; 1971; 1979; Charsekin 1963; Durante 1968; Morandi 1984-1985; cf. the negative attitude in a critical survey: Beekes 1990, Villar 1991, 371-373; see on some Anatolian parallels also Laroche 1960b; 1966, 263; Adrados 1994; Cimurskij 1994 with further bibliography.

direction of comparing these languages not only to each other but also to the rest of Northern Caucasian.¹⁶

1. Hurrian endan "king" and the origin of Hurrian -nd- (nasal + dental stop).

The excavations in Mozan (ancient Urkesh) have confirmed the meaning "king" for the title *endan*. It has been known from the foundation inscription of Tish-atal, three copies of which have been preserved (in a tablet and a plaque in the Louvre and a plaque in the Metropolitan Museum of Art): *Ti-iš-a-tal en-da-an Ur-kèš^{ki}* "Tish-atal, the king of Urkesh".¹⁷ The archaeological discoveries in Mozan/Urkesh have yielded numerous seals containing copies of a similar combination: *Tup-ki-iš en-da-an Ur-kèš^{ki}* "Tupkish, king of Urkesh"¹⁸; a copy with a logographic (Sumerian) spelling LUGAL "king" (= *endan*) was recently found.¹⁹

The meaning "king" established as definite by these new inscriptions was denied by Laroche.²⁰ He suggested instead the meaning "priestess", based on the much later Hittite-Hurrian (Southern Anatolian-Kizzuwatnian) female name of an occupation *SAL-e-en-ta-an-ni-* (in a ritual of the Hurrian goddess Hebat, K Bo VII 60 and some other ritual texts) which might have contained the Hurrian suffixed article *-nni*²¹, as well as on the Boğazköy Hurrian or Luwian *entašši-* (according to Laroche, having either an abstract Hurrian suffix *-ašši-*²² or the Luwian suffix *-ašši-* of possessive adjectives, which seems possible if one has in mind the Luwian-Hittite interrelationship in Southern Anatolia of the last centuries of the Hittite Empire). Although the exact meaning, word structure and linguistic provenance of both the stems are not clear,

¹⁶ Diakonoff 1980, 105; Ivanov 1983b; 1988; Orel and Starostin 1989.

¹⁷ Parrot and Nougayrol 1948; Diakonoff 1967, 443; Pecorella and Salvini 1982, 15; Buccellati 1988, 31-34; Muscarella 1988, 94; Wilhelm 1998 (with a detailed history of research, and references).

¹⁸ Buccellati and Kelly-Buccellati 1995-1996, 9-14; 1996; 1997, 80-86.

¹⁹ Buccellati, personal communication.

²⁰ Laroche 1960a, 192; 1980, 82; following Laroche, several scholars, among them Nozadze 1978, 32-33, n.53; other references: Wilhelm 1998.

²¹ Laroche 1980, 214.

²² Cf. Haas and Wilhelm 1974, 135.

Laroche's hypothesis that they both originate from Akkadian *entu* seems plausible. This Akkadian term for a priestess occurs in Hittite-Luwian Kizzuwatnian rituals: *ŠA SALE-EN-TI U ŠA LUŠANGA* "of the priestess and of the priest"²³. The same opposition is probably repeated in the Hurrian borrowed terms *endanni-* : *šankunni-*.²⁴ But the gender contrast alone of these two terms speaks against connecting an Old Hurrian title of a male person to the Akkadian name of a female priestess (having the mark *-ti* of the feminine). The meaning "priest" suggested as a solution²⁵ could not help in explaining the difference of this title from the Hurrian continuation of the Akkadian borrowing. If Laroche is right in suggesting the latter, then—contrary to his opinion—the two later words found in the Boğazköy texts at the period of the intensive borrowing of Akkadian cultural and religious terms have nothing to do with the Old Hurrian title of a king.

As to the origin of the latter, it has been suggested that *endan* may contain the suffix *-dan* of the names of professions²⁶, although it seems doubtful that "to be a ruler = king" might have been supposed to be a profession; the known examples of this suffix—like *abul-da-n(i)* "gate-keeper = the one in charge of the gate" from a later Akkadian borrowing *abullum* > *abul-* "gate"²⁷—point to the other semantic field and belong to a much later period. According to Wilhelm²⁸, *en-dan* is derived either from a borrowed Sumerian *EN* "ruler"²⁹—the solution that he prefers now³⁰—or from the Hurrian nominal stem *eni* "god".

²³ KUB XL 2 Vs. 5', cf. Starke 1990, 206; cf. on the *entu*- priestess in the KILAM festival: Haas 1994, 749, 757 a.o. (with references).

²⁴ On the last pair, cf. Xachikian 1985a, 66, 132, n.4.

²⁵ Diakonoff 1971, 111, n.123, "a priest or a priestess?"; Xachikian 1985a, 6, 9, 132, n.4.

²⁶ Wilhelm 1989, 11.

²⁷ Wilhelm 1970; Xachikian 1985a, 66. See the remark of G. Buccellati ap. Wilhelm 1998 on the function of the suffix that makes the derivation from "ruler" less plausible than that from "god".

²⁸ Wilhelm 1989, 11.

²⁹ Like Akkadian *en-ti-u*, cf. Xachikian 1985a, 51.

³⁰ Wilhelm 1998.

As for Sumerian EN: this was the main social term in Ebla³¹, where contact with Hurrian is documented. Still, deriving the Hurrian title from it remains doubtful, since the suffix has a meaning that does not fit the derivation.

The Hurrian noun *eni* "god" appears in the form *en-* (without the final vowel of the stem) before the following *-n-* of the suffixed article.³² In the Hurrian-Hittite bilingual text K Bo XXX II 14 I 36, the Hurrian plural collective form *e-en-za-a-ri* = Hittite DINGIR^{MEŠ} "gods" is attested. It probably contains the phoneme [ž] rendered by a cuneiform syllabic sign beginning with *z-*. The morphonemic alternation of consonant phonemes is seen in the later parallel Boğazköy forms *e-in-ša-a-ri* (V Bo T 14 10'), *i-in-za-ar-ri* (K Bo XXXII 26 Vs. II 33')³³, and Ras Shamra alphabetic Genitive Plural *enž* = cuneiform Hurrian *e-en-na-a-še*(/ši) and Comitative Plural *enžr* earlier interpreted as **enna-šura*³⁴. The latter may be close to the form of collective Plural *enš/zari*³⁵; compare the similar semantic roles of *e-en-za-a-ri* in *ta-ḫe-e-ni-wa-a-al e-en-za-a-ri ma-a-ta-aš-tab i-ti-i-ta* (= *nu-za a-pé-e-da-ni LÚ-ni DINGIR^{MEŠ} še-e-er ḫa-at-ta-a-tar ši-iš-ḫi-ir* in the Hittite translation) "to this man the gods have given (allocated/assigned) wisdom/insight"³⁶ and *enžr* = *enz_{1r}* in *ašhn_{21r}m hldp enz_{1r} trn_{21r}m hldp enz_{1r}* "and you are elevated above the higher gods and you are elevated above the lower gods"³⁷ RŠ 24.278₃₋₆. According to Neu³⁸, the original suffix of the

³¹ Cf., for instance, on EN = *malikum* Diakonoff 1985, 329-330; on (in ŠU) EN-eb-la^{kl} "(in the hand) of the king of Ebla", EN 'À-du^{kl} "king of Adu": Pettinato 1987, 26, 30-35 a.o. Other data from neighboring areas: Wilhelm 1998.

³² Cf. the forms in Laroche 1980, 81; Xachikian 1985, 153.

³³ A form with the suffixed article **-m- > -r-*: Neu 1996, 139.

³⁴ Laroche 1980, 81; with some phonetic differences Xachikian 1985a, 120, 153.

³⁵ On a possible meaning of *-ra* in such grammatical contexts as *ĪD^{MEŠ} HUR.SAG^{MEŠ}-šura* "rivers and mountains" cf. already Speiser 1941, 111 and n.122 for North-Western Caucasian parallels.

³⁶ See on the translation: Neu 1996, 138-139.

³⁷ Cf. on the similar semantic opposition of the cognate *ašhui* "upwards" : *turi* "down" in the bilingual text: Neu 1996, 186-188, 203-204.

³⁸ *Ib.*, 39, 139.

collective form *enzari* was *-šāri. Denying the existence of such a suffix³⁹, Starostin thinks that the fricative consonant belongs to the root, which he reconstructs as Northern Caucasian *amšā with further distant Yenisseyan and Sino-Tibetan cognates⁴⁰. In that case, the Hurrian form *enzāri* [enžāri] contains the Plural element -(a)r widely represented in Northern Caucasian. As already noticed by Thomsen (1899), the suffix is known in Etruscan in a similar grammatical function: see the identical opposition of Etruscan -ar (animate) : -(h)va (inanimate⁴¹) and Abkhaz -r : -xʷa. If Etruscan *eis-er/ais-e/ar* "gods"⁴² is identified with Hurrian *enš/z-ari* "gods", the loss of -n- before -s- should be supposed.

Since on the one hand in Northern Caucasian all the words derived from the root have religious or spiritual meaning⁴³ and not a social one, and on the other hand it is not easy to reconcile phonetically the above reconstruction and interpretation of *enzari* with the Hurrian form *endan*, it seems that it is safer to try to find for the latter another historical explanation.

A possible way of analyzing the whole sentence, in two variants of which (depending on the difference in the royal name) the form had been used, was pointed out by Diakonoff⁴⁴. He suggested that the final -n in *enda-n* is a copula of pronominal

³⁹ It was supposed by Neu besides this noun in only one other word, for which another explanation is also possible: Starostin 1995a, 134, etymology 15; 1998, etymology 47. But cf. other possible examples of the same suffix in two more words: Wilhelm 1992, 135.

⁴⁰ Starostin 1995b, 188. If, as suggested above, the Hurrian consonant is [ʒ], the phonemic correspondences are a bit different but still possible from the point of view expressed in Diakonoff and Starostin 1986.

⁴¹ Cf. Olzscha 1968; Ivanov 1983a; 1988, 216.

⁴² The other explanation already suggested by Bugge 1909, 126-127 and later developed by several scholars (as recently in Steinbauer 1993, 299) is based on a striking resemblance to Italic forms like Umbrian *esono-* "sacred, divine", but the direction of borrowing is not clear: an Etruscan source seems possible for Eastern Italic forms.

⁴³ Nikolayev and Starostin 1994, 243.

⁴⁴ Diakonoff 1967, 444; cf. Xachikian 1985a, 122. Other views in Wilhelm 1998 and in Girbal 1990 (according to Girbal there is no copula but only a pronoun indifferent to the opposition of person).

origin⁴⁵ that expresses the relation between the subject and a noun used in predicative function.

The stem *enda-* "king" can be connected to Northern Caucasian **niwc(w)ā* "prince, ruler", reconstructed on the basis of such words as Avar-Andi **nuco* "prince" > Avar *nucā-l*, *nucf-ja-w* "prince", Proto-Western Caucasian **nəcʷa* "god" > Proto-Abkhaz-Tapant **nəcʷa* > Abkhaz (a)-*nčʷa* "god", Abaza *nčʷa* "god".⁴⁶ The semantic link between the name of a ruler (king) and the name of the god in Urkesh may be connected to other cultural data⁴⁷; the association seems universal for different Ancient Oriental traditions.

The following phonemic processes should have occurred in Proto-Hurro-Urartian and Hurrian in the pre-written history of the word *enda-*. The vowel in the first syllable of the stem was dropped as in some Northeastern Caucasian languages and in Proto-Northwestern Caucasian. A prothetic vowel developed before the initial consonant as in many other Hurrian words.⁴⁸ The final vowel was preserved. Labial sonants were dropped as in many other cases.⁴⁹ The affricate changed into a stop after a nasal. The special development of non-emphatic affricates in such a position had been discovered earlier⁵⁰, but this particular case may now be elaborated. There are at least two more correspondences proving the phonetic law according to which the original combination nasal + affricate > nasal + stop: Hurrian *wa-an-ta-ri-ni-na-a* = Hittite logogram (Sumerogram) ^{LÚ.MEŠ} MUHALDIM "cooks", in the description of a feast in the Netherworld in the bilingual text (K Bo XXXII 13 I 22-II 22), is understood

⁴⁵ Diakonoff 1971, 128-129; cf. Laroche 1980, 174, Speiser 1941, 171-172; Xachikian ib.; 1985b, 23. The alternative view, according to which the whole group of the first three words in the inscription of Tishatal is a subject of the following sentence (Nozadze 1978, 31-33), is refuted by the structure of the titles that appear as self-sufficient on the Mozan seals.

⁴⁶ Cf. on all these and other related forms: Nikolayev and Starostin 1994, 854-855.

⁴⁷ Cf. Buccellati and Kelly-Buccellati 1996, 75 and n.55 (in connection with Wilhelm's etymology discussed above).

⁴⁸ Diakonoff and Starostin 1986, 22, correspondences 23-24; 51-52, correspondences 125-126; 58, correspondence 144; 64-65, correspondences 166-167; Starostin 1995a, 133, etymology 2.

⁴⁹ Starostin 1998.

⁵⁰ Diakonoff and Starostin 1986, 41.

by Neu as a Plural with an article: *[*fandarinina*]; a syncopated form of this Plural reappears in another part of the text where a half-mythological story connected to Ebla is told: Hurrian *pa-an-ta-ri-in-na* = Hittite logogram ^{LÖ.MES} MUHALDIM.⁵¹ The initial *f/v(a)- of the word for “cooks” is rendered in the bilingual text in the first case by a special cuneiform sign (a combination of the sign for *wa* with a sign for *a* inscribed in the lower right-hand part of the former) used only for Hurrian, Hattic and Palaic texts in Boğazköy archives to denote a specific fricative labial absent in Akkadian or Hittite. In the second occurrence of the form, the same initial is written with the sign *pa-*. In the form beginning with this specific Hurrian fricative phoneme, one may suppose a trace of the old Proto-North Caucasian prefix of the plural of the class of male human (“reasonable”) beings. After the final group of suffixes *-in(i)na-* is separated, the remaining stem (*f/va*)-*ndar-* may be directly identified with the Proto-North Caucasian *-*imdžĕr-* “to bake, roast”, reconstructed on the basis of verbs like Lezghi **ičar-* “to bake, roast, boil” > *čra*, Archi *čar-*, Chechen att- “to bake, roast”, Northern Western Caucasian *ž’a-* “to roast, bake” > Ubykh *ž’a-* (particularly in the second parts of compounds), etc.⁵²; Hattic *-šuwa* in a compound *hanti-p-šuwa* “cook”.⁵³ If the Western Caucasian labialization, as supposed by Nikolayev and Starostin, is caused by a lost class prefix, it might be interesting to compare it to the frozen prefix in a Hurrian noun derived from this root. The following phonological changes occurred in Proto-Hurro-Urartian and Hurrian. The initial vowel of the root was fused with the final one of a class prefix. The front short unrounded vowel **ĕ* > Hurrian *a*.⁵⁴ The group **mdž* > *-nd*.⁵⁵

⁵¹ K Bo XXXII 15 I 27'-28'-II 27'-29'. Neu 1996, 260, 336-337, 339, 450, 110.

⁵² Nikolayev and Starostin 1994, 643; Trubetzkoy 1930, etymology 98; 1987, 279; Starostin 1987, 462.

⁵³ Ivanov 1985, 47, etymology n.47.

⁵⁴ Cf. Diakonoff and Starostin 1986, 67.

⁵⁵ Cf. on the change *m* > *n* in other positions (before a velar): Starostin 1988.

The Hurrian adjective and substantive (relative noun in Fillmore's terms) [f/va/end-a/i] "right; the right [side of the body]" (as opposed to šaphaldi "the left [side of the body]"⁵⁶) is written with the first syllable mostly rendered as wa_a- (wa_a-an-ta-ni he-ra-a-ri "the right sinew = the right upper arm" in the curse repeated three times in the Hurrian-Hittite bilingual text, K Bo XXXII 14 Rs. 37) but rarely as pa-: pa-an-ta-ni (pa-an-ta-ni he-[e]-ra-a-ri in the same curse, ib. 59 and I 48-49⁵⁷), cf. also wa_a-an-ti-in "on the right hand" in the description of the feast in the Netherworld in the same text, K Bo XXXII 13 I 25-26⁵⁸; the spelling with initial pa- is attested once in Mari, but several times in Boğazköy texts.⁵⁹ According to Laroche, proper names like Wandī-ku may belong to this root, but a similar Nuzi male proper name Wa-an-tar-ku (cf. also Wa-an-ta-ri, Wa-an-tar-ki-in-tar⁶⁰) contains a form like the stem discussed

⁵⁶ Wegner 1995, 122-123 (n.9) and 124 (n.12). Hurrian šaphaldi "left" seems to have particular importance for the entire problem of the phonetic shape of a whole group of terms common to Hurrian and the other Northern Caucasian languages on the one hand and to Indo-European on the other (see on this problem below, in the section dedicated to the name for "horse"). The Hurrian word has been identified genetically with the dialectal Eastern Caucasian *čhapV-IV- "left" reconstructed on the basis of Dargwa *čipil "left" > Chirag dialect čipil "left"; Lezghian *čapVI- > čapla "left", Agul čaplan "left" (Diakonoff and Starostin 1986, 54; Nikolayev and Starostin 1994, 341); the resemblance of the word with Modern Persian čap (Farsi and Tadzhi, borrowed into many other Iranian languages) was mentioned as a less plausible alternative possibility of an Iranian borrowing in Eastern Caucasian. But it seems that the word is truly connected to Cuneiform Luwian ipala- "left" (with regular loss of the initial consonant, Melchert 1994, 254). As Čop first suggested, the Luwian word within Indo-European is cognate with Tocharian B śwālyai, A śālyi "on the left" < *špal- (with palatalization of the initial Indo-European velar consonant before a front vowel that had disappeared later in Tocharian; but cf. also parallel Iranian forms: Ormuri čēla/čēl "left-hand", Efimov 1986, 69). Phonetically, the relationship between the forms can only be explained by a supposition of an early borrowing of a dialectal Indo-European satəm lexeme (such as the Proto-Iranian prototype of Persian čap) into Eastern Caucasian dialects and Hurrian. The Luwian word goes back to another Indo-European dialectal satəm form while in Tocharian the original centum shape changed in the period of later Tocharian palatalization. The difficulties connected to the word seem to be particularly severe, no doubt because it became a cultural migrational term, as shown by the Altaic correspondences. But in this case, it is definite that the direction of borrowing was from Indo-European into Northern Caucasian and Hurrian, and that the forms were borrowed from a satəm dialect. Also important is the participation of Luwian, Tocharian and Iranian in these lexical contacts.

⁵⁷ Neu 1996, 152-153, 191.

⁵⁸ Neu, ib., 263-264.

⁵⁹ Laroche 1980, 293-294; Xachikian 1985a, 36-37, 142; Haas and Wilhelm 1974, 94; Wegner, ib.

⁶⁰ Cassin and Glassner 1977, 164.

above (if *-r-* is not a suffix here, as it seems from the opposition *wand-i* : *wand-ar-*), but these names show no trace of the article. Proper names like *Pend-ip-šarri* (a priest of Hurrian Ishtar-Shaushka, father of the Hittite queen of the Hurrian dynasty Puduhepa⁶¹), *Nuzi Want-ip-šarri*⁶², *Bant-ip-šenni* are supposed to contain *want-/went-* "right (= not wrong)"⁶³, but if they are not connected to this root, they may have the passive stem of a verb in *-i*⁶⁴, see below on a verb with a similar stem.

Just as in the form discussed above (the name for "cooks"), one may see the class prefix in the initial syllable of *w/v/f-and-* "right". In that case, the stem *-and-* "right" can be identified with the Northern Caucasian **Hāndžē* "right" reconstructed on the basis of Avar-Andi **hanči-* "right" > Andi *hančil* etc.⁶⁵; a combination of this Hurrian adjective with the noun *herari* "sinew = upper arm" (see above) can be traced back to Proto-Northern Caucasian, since both the words belong to inherited vocabulary⁶⁶ and very often form compounds based on old phraseological combinations. In the Northern Caucasian stem "right", the following changes are supposed: the initial laryngeal **H-* was either lost or not represented in the cuneiform orthography; the vowel of the root was preserved; the final group nasal + affricate developed to nasal + stop just as in the other words discussed above.

Besides these three etymologies (*endan*, *f/vantar-*, *f/vant-*), in which one can safely suppose traces of the phonetic law just suggested, there are some other Hurrian words in which the same origin of the group *-nt/d-* is possible. Thus in the verbal

⁶¹ Laroche 1966, 144; Haas and Wilhelm 1974, 4.

⁶² Cassin and Glassner 1977, 165.

⁶³ Xachikjan 1985a, 142, n.68.

⁶⁴ Nozadze 1978, 65-67 on this type of compound proper names.

⁶⁵ Nikolayev and Starostin 1994, 544-545. S. A. Starostin has informed me that he has also considered the possibility of this Hurro-Northern Caucasian comparison, although he did not find it absolutely safe.

⁶⁶ See on the latter Starostin 1988, etymology 14; the Northern Caucasian protoform **xwī'rV* "vein" is discussed in Nikolayev and Starostin 1994, 1064-1065; Trubetzkoy 1930, etymology 71; 1987, 278; Starostin 1987, 459. Etymologically, *-ari* should be a suffix. The same combination of the name for "(upper) arm" (with another suffix: *-hi* instead of *-ari*, cf. Neu 1994, 153; Wegner 1995, 122-123 on *herari* : *herahi*) with the adjective *pandani* occurs in the ritual of Ishtar KUB XXVII 1 Vs. II 4, Salvini 1977, 82; Wegner, ib.: *pantani hirahi* "the right upper arm (of Teshop)".

stem *pend-/pind-* = Hittite *appa tarnu-* "to let come back, to return, to set free", Akkadian *ŠAPĀRU(M)* "to send" (in the bilingual text K Bo XXXII 15 I 16–II 16; IV 6–7–III 6–7⁶⁷), one may suggest a frozen class prefix *p-* as has been found in several other Hurrian verbs.⁶⁸ The last part of the stem *-e/ind-* may be compared to Western Northern Caucasian **-džə* "to move back, to return" > Proto-Adyg-Kabardian *-džə* (suffix of a reverse action) > Kabardian *-žə*; the Western Caucasian morph is traced back to the Proto-Northern Caucasian verbal root **ičwĕ* "to come, to return" (> Avar *ač-in-*, with the *-n-* conjugation that is supposed to be of later origin⁶⁹), which in many Eastern Caucasian languages is contained in verbs used mostly (or only, as in Khinalug) with locative preverbs. If in Proto-Hurro-Urartian (or an early dialect that had been its historical parent) this morph was preceded by a nasal element, such as a local preverb (as in cognate Eastern Caucasian stems, but cf. also in Western Caucasian morphemes like the Adyg-Kabardian directive verbal prefix *na-* of pronominal origin) or another verbal stem (as in Western Caucasian), the resulting group might have developed into Hurrian *-nd-*. But this conjecture is purely hypothetical, since no such combinations are attested in Hurro-Urartian, and their structural relation to the initial prefix (presumably a class prefix) is not clear. Besides, the type of Proto-Northern Caucasian affricate is different from all the other examples studied above. If one operates with very short morphs with rather broad meaning, as is the case with most Northern Caucasian verbal roots, the degree of certainty is much less than in the case of larger lexical units having some specific connotation.

Since, nevertheless, the other cases discussed above seem transparent⁷⁰, it can be stated that from the phonetic point of view the suggested etymology of Hurrian *endan* is quite possible.

⁶⁷ Neu 1996, 323, 348, 521.

⁶⁸ Starostin 1998, etymologies 34–36.

⁶⁹ Nikolayev and Starostin 1994, 627–628.

⁷⁰ In previous studies some possible examples of another development of the group nasal + affricate in Hurrian have been discussed: see e.g. on *anz-an-uhh-* Diakonoff and Starostin 1986, 23; Nikolayev and

2. Hurrian *tari* "fire" : Avestan *ātar* "fire".

Among Hurrian words identified as a result of the study of the bilingual text, the noun *tari* "fire" has emerged in the sentence containing a curse: *a-me-la-an-ni ta-a-re-eš* = Hittite *ma-a-na-an pa-ah-hu-e-na-an-za ar-ha wa-ar-nu-zi* "let the fire burn him completely"⁷¹ (K Bo XXXII 14 I-II 6-7; repeated twice). In the verb, a common Hurro-Urartian stem *am-* has been found, reflected also in Urartian *am-ašt-*, used exactly like the same Hittite adverb-verb combination to describe the fate of hostile countries in royal inscriptions. It is compared to Northern Eastern Caucasian **Vmha-* "to burn, to be warm" > Chechen *mela*, Tabasaran *manī*⁷². But the Hurrian word for fire is not derived from the traditional Northern Caucasian vocabulary. It seems to be borrowed from Iranian.

Avestan *ātar* (Middle Persian *ātaxš*) denotes in particular the sacred and deified fire.⁷³ The archaic ritual meaning (the ancient date of which is documented by the Old Indian *atharvan* "the [fire] priest > sorcerer, magician"⁷⁴) has been preserved in

Starostin 1994, 262; but the meaning of this verbal stem is not yet sufficiently clear (see Neu 1996, 350; cf. Nozadze 1978, 63-64).

⁷¹ Neu 1996, 104-107; Wilhelm 1992, 134 (further references). The Hurrian Ergative is translated by the form of the Hittite Ablative of a quasi-ergative (or animated neuter) in *-ant-* (cf. on the form Hoffner and Güterbock 1994, fasc.1, 12). The Hurrian Absolutive *tar-ri-ya* in a fragment of the Kumarbi epic KUB XLV 61 Vs. II 1 may correspond to the stem *[pa-]aḥ-ḫur* in KUB XXXIII 1 15 I 3', although both fragments are damaged and the contexts are not clear.

⁷² Starostin 1998, etymology 4, with corrections to Nikolayev and Starostin 1994, 807; cf. also North Western Caucasian **ma-č-*, "fire" with an unexplained morph *ma-*, Trubetzkoy 1930, etymology 38; 1987, 276; Starostin 1987, 456-457; Nikolayev and Starostin 1994, 354-355 (see on Hattic Ivanov 1985, 50). On Urartian contexts: Melikishvili 1960, 389; Meshchaninov 1978, 38 (the attempt to find the noun for "fire" in this form, *ib.*, 37, is wrong).

⁷³ Bartholomae 1979, 312-315; Abaev 1958, 69-70, 182; Perixanjan 1973, 442-443. The special importance of the word is motivated by its being the center of the whole semantic field of the fire lore that was essential for Iranian (and earlier Aryan) religion: Hertel 1925; 1927; 1929; Abaev unpublished, II (the second volume, prohibited by Soviet censorship, contains an important study of the Iranian fire cult); Kramers 1954; Boyce 1968; Perixanjan 1983, 161, 335, 337.

⁷⁴ A possible borrowing from Iranian (Benveniste 1969, 282) that should be very old. Cf. Avestan *ātrəvaš* "the second fire priest", Bartholomae 1979, 318ff.; Middle Persian *āturvašīh* "the fire priest of lower rank", Perixanjan 1973, 443. The exact phonetic prehistory of Avestan *aθaurvan* "priest" (the highest social rank, Benveniste 1932) is still unclear.

Ossetic folklore in the compound Aert-xī/oron "the deity of Fire and Sun (who may be benevolent but is also in charge of skin diseases); a sacred New Year cake dedicated to this god and eaten by the whole family but not by strangers" (cf. the same Eastern Iranian elements in the reverse order in Sogdian γwr'rd [*xōr-arθ] "the fire of the sun", the old Ossetic divine name Xur-at-xuron < *xur-art-xur-on "Fire, companion of the Sun"⁷⁵), and possibly in Scythian Ψευδαρτάκη (read instead of the distorted Ψευδαρτάκη): λόφος ἐν Σκυθία μετὰ τὸ λεγόμενον ὄρος ἅγιον (Steph. Byz.) = *fsand- "holy" + art "fire".⁷⁶ The word is continued in the other Eastern Iranian languages (Khwarazmian 'dr, Bactrian aθ(o)šo "fire", Sogdian "tr, Yagnobi ol "fire", Afghani or, Pamirian Shugni yōc, Yazgulian yec, Mudzhan yūr, Yidga yūr⁷⁷) and in Western dialects (Kurd ār). The number of Indo-European cognates with the same suffix⁷⁸ is restricted, and although they are closely related semantically, they usually do not have the primary meaning "fire". It is commonly accepted that the word is connected to Latin āter "black" (< blackened by fire), ātrium "forecourt, hall"

⁷⁵ Dumézil 1978, 141-142. According to Dumézil's interpretation the name in an archaic Ossetic prayer written down by Gatiev 1876, 21, should be understood as "Sun-Fire, the son of the Sun" (on this, cf. already Miller 1882, 266-267). In Avestan religion Fire is the son of the principal god Ahura Mazda. The form was borrowed into Slavic as the name of a fiery demon or bird, Czech Rarog, see on the different sound shapes of the word Jakobson 1985, 7, 26-28, 47-52 (with another Iranian etymology).

⁷⁶ Vasmer 1923, 57; Abaev 1949, 158. Less clear is the interpretation of the name Ἀρθάμων ("ārθr "fire" + ā-man- "to teach, to show; to adore" > Ossetic amonyn used also in mythological names, cf. Milewski 1969, 157, on the meaning of the Ossetic verb; Abaev 1958, 52-53, and Zgusta 1955, 70, for other suggestions).

⁷⁷ Benveniste 1929, 91; Steblin-Kamenskij 1981, 321; Griunberg 1972, 391; Xromov 1972, 121, 127; Sokolova 1967, 14, 125; 1973, 9, 48; Edel'man 1986, 172-175.

⁷⁸ The root is connected to the Hittite verb ha-/a-/ay-/e-/w)a- "to be warm, to be hot", but on the difficulties in reconstructing the initial (even synchronically for the Hittite rhyming formations) see Puhvel 1984, 9-12; on *Hal-dh- (Old Irish aed "fire"): Sturtevant 1942, 45; Pokorny 1959, 11; Watkins 1985, 1. Theoretically Iranian ātar might have belonged to the same Eastern Indo-European (Greek-Macedonian-Iranian) stem as Homeric Greek αἰθήρ "the upper air, the purest and most elevated radiant part of the atmosphere", Macedonian ἀδῆ· οὐρανός (Hsch.; with a morphonological loss of the final *-r, see also as a parallel formation Tocharian B e/īper, A eprer "atmospheric space"), but several phonetic irregularities in the correspondences point to taboo distortions, quite understandable in an important sacred term. According to Jasanoff (1979, 145) the Armenian verb ayr-el "to burn" (previously thought to be related to the Iranian noun) may be a cognate of Greek αἰθω, with the same meaning.

(originally a place where the smoke from the hearth escaped through a hole in the roof, cf. Avestan *ātrya-* “ashes”, Buddhist Sogdian “š’kw” “ash”, Mudzhan *yéxyo* “ash”, Sarykol *θer*, Shugni *θir*, Eastern Iranian **aθr-dāna-* “hearth” > Pamirian Rushan *raδōn* “hearth”), Latin *atrōx* “frightful (< *black-looking)”.⁷⁹ An early Iranian borrowing with a still unexplained initial **v-* is a common Balkan-Carpatian areal term for “hearth/fire”: Albanian *vatër*, *vatra* “hearth; fireplace”, Rumanian *vatră* “fire”, Gypsy *vātro/-a* “campfire > camp”, Hungarian *vatra*, Slovene *vatra*, Serbian *vatra* “fire” (*živa vatra* “living = sacred fire”), Czech *vatra*, Polish *watra*, *watrzysko*, Ukrainian *vatra*, *vatryšče*, Russuan *vatr-uška* “a traditional cake filled with cottage cheese”.⁸⁰ The spread of the word should have been connected with the prehistoric influence of the Iranian fire cult.

The same hypothesis may be suggested in connection with the Hurrian word for “fire”. The source of the borrowing seems to be definitely Iranian since in the other languages the meaning is not exactly “fire”. It was changed as it was borrowed from (Proto-) Iranian and accommodated into the morphonemic structure of Hurrian nominal stems: the initial vowel disappeared and the additional final vowel was added. Iranian influence on Proto-Northern Eastern Caucasian⁸¹ and Proto-Kartvelian⁸² is well documented. Still, it is not clear whether the word for “fire” was borrowed only because of the influence of the (Proto-) Iranian fire cult, or whether it was part of a more massive (Indo-) Iranian lexical borrowing in Hurrian, the other

⁷⁹ Ernout and Meillet 1994, 53-54; Sokolova 1967, 14; 1973, 76 n.2; Edel’man 1986, 173; Pokorny 1959, 69; Watkins 1985, 4; Delamarre 1984, 179.

⁸⁰ On the areal distribution: Klepikova 1973; Hamp 1976; 1981; Huld 1984, 124. The supposition that the Gypsy borrowing from Iranian had been a source for all the other areal terms (Machek 1957, 124) cannot be proven. The Gypsy word (see Ješina 1886, 97, 105, on the form in the Czech area dialects) is supposed to come from Rumanian (Wolf 1987, 239, n.3648; Boretzky and Igla 1994, 298).

⁸¹ Starostin 1988, 113-114, with bibliography; in particular, the name “mountain, hill” shows a specifically Iranian form and may be important for defining the characteristic features of the landscape of the contact area. See above on the word for “left side”.

⁸² Klimov 1994, with references.

traces of which remain to be found (the supposed influence of Mitannian Aryan might have belonged to the period after the composition of the bilingual text).

3. The meaning of the Hurro-Urartian stem *pur(r)a-* and the Hurrian name *ṁPurra-* (with a note on Latin *puer-*).

As discovered by Laroche, according to the four-language dictionary from Ras Shamra (RŠ quadr. 137 III 4), Hurrian *purame* = Sumerian *ĪR* = Akkadian *ardu* = Ugaritic (*ʾabdu* means "slave, servant".⁸³ When Laroche announced his discovery in his talk on "Récents contributions de Ras Shamra au lexique hourrite"⁸⁴, Diakonoff immediately suggested the Hurro-Urartian etymology: Hurrian *pura-me* is equivalent to Urartian *b/pura-* "slave".⁸⁵ The former contains a suffix *-me*, cf. *-pši* (< **amaši*⁸⁶) in *pura-pši* "priest = servant of the god" (the stem is interpreted as [**pora-*]⁸⁷). The latter is semantically close to the Urartian male proper name *ṁHaldi-pura* (= *ṁHal-di-ĪR*⁸⁸) "the slave of the god Haldi", derived from *b/pura-* "slave" (this noun is often used in similar combinations with the name of a god⁸⁹). It has been supposed that the word is cognate with Proto-Eastern Caucasian **bHāl̥i* > Lezghian *p-až* "natural child", Tabasaran *baj* "boy, son".⁹⁰

The noun *purammi-* (with double spelling *-mm-* different from later texts and possibly connected to prosodic features, as probably also *-rr-* in *purra-*) is attested in the part of the Hurrian-Hittite bilingual text that deals with its main topic, which is

⁸³ Laroche 1980, 205, with references.

⁸⁴ 10 August 1960, Moscow, at a morning session of the XXV International Congress of Orientalists.

⁸⁵ Diakonoff 1963, 60; 1971, 77.

⁸⁶ Laroche 1980, 206.

⁸⁷ Cf. Xachikian 1985a, 48, 58.

⁸⁸ Diakonoff 1963, 51, 90, 94.

⁸⁹ Melikishvili 1960, 362; Gvaxaria 1963, 335; Meshchaninov 1978, 91-93.

⁹⁰ On the etymology and on quite different variants of the suggested Northern Caucasian reconstruction, cf. Diakonoff and Starostin 1986, 16; Nikolayev and Starostin 1994, 298-299; the etymology runs the risk of not taking into account the universal spread of such "baby" terms.

the setting free (kirenzi⁹¹) of slaves or prisoners, including also the god Teshop who is to be set free. The Hurrian sentence *ki-ru-un-na pu-ra-am-mi-ib ki-i-ru(-)nu-ul-mi-ib* is translated by the Hittite *tu-el İR^{DAM} GÉME^{TAM} pa-[ra-a tar-na]* (K Bo XXXII 15 IV 2-3 = III 4) "let your male slave be free, let your female slave be free". The noun *ulmi* "female slave" discovered in this bilingual text⁹² may have the same suffix *-mi* as *pura-m(m)i* "male slave". With a possible metathetic change and semantic specialization the root *ul-* may represent the same stem as that of Urartian *lu-tu* "woman".⁹³ It can be supposed that in the same bilingual text the Hurrian stem *pur(r)a-* (without any suffix and with the double spelling *-rr-*) is represented either only in a male proper name that originally might have had the meaning "Slave", or also in a noun with a generalized meaning "the Slave = slaves as a social class". The interpretation of the word as a male proper name is made necessary by the use of the determinative in the beginning of the part concerning Ebla: Hurrian *na-ak-ki-ma* *ṁPur-ra-an a-az-zi-i-ri ta-am-ra e-bi-ir-na za-a-zu-lu-u-uš-te-ri* = Hittite *ar-ḫa-ma-an tar-na[ṁPur-ra-an-pá]t EGIR-pa pí-ya-an[(-t)a-an A.NA IX LUGA]L^{mes} ku-iš a-da-a[an-na pí-iš-ki-iz-z]i* "and set free also Purra (= the Slave or Priest = Servant of the god), the prisoner ('the one who is given back' according to the Hittite version), who has to (or will) give food to nine kings"⁹⁴ (K Bo XXXII 19 Vs. I 3-4 = II 2-4). It is possible that the *-n* in *Purra-n* is a syntactic connective element (comparable to the copula *-n* in *enda-n*) that expresses the link between the proper name and the following noun

⁹¹ Neu 1996, 9-12, with references. Regarding the equivalent Akkadian term *addurārum* it is important to bear in mind the previous discussion of the term in Larsen 1976, 63-75; Hoffner 1998, 180-181.

⁹² Neu 1996, 346, 451; see Laroche 1980, 280, on the other occurrences of the word.

⁹³ For a Northern Eastern Caucasian etymology and the morphological structure of this collective plural, see: Diakonoff and Starostin 1986, 27; Nikolayev and Starostin 1994, 765 (the Northern Eastern Caucasian stem was discovered by Trubetzkoy 1922, etymology 5; 1987, 239; Starostin 1987, 443). The idea of a Northern Caucasian borrowing in the Lydian word for "woman" has often been suggested.

⁹⁴ On the translation, see Neu 1996, 396-402; the modal meaning may be suggested as an alternative to the future sense that is supposed by Neu.

related to the participle.⁹⁵ The idea that one person is (or will be) feeding nine kings makes it clear that the narration, although associated with the history of Ebla, is to be understood as a mythological one. In a parallel tablet (K Bo XXXII 20 Rs. IV 16-17) the Hurrian passage just cited is repeated. But before it a story of ^mPurra- in connection to the Eblaite and other kings is told (cf. the equative form ^mPurra-nna and Genitive ^mPurra-wi₁ : ib., Vs. I 7', 8'). Unfortunately, without the Hittite translation, which is absent or quite fragmentary, it is impossible to understand the plot; still, it seems that Purra appears as an important historical and/or mythological person whose fate is miraculously bound to a stone.⁹⁶ If his name is really connected to the noun *purra*- "slave", it can be understood as part of the peculiar structure of the Hurrian-Hittite epic poetic narration, in which the topic of slavery and of the slave/prisoner being set free is discussed via the example of the highest god of the pantheon Teshop or of such an important Slave = prisoner as Purra.

In the other parts of the same Hurrian text the noun *purra*- is used without the determinative of a male personal name, as opposed, for instance, to the name ^mMe-e-ki, which is always preceded by this cuneiform sign. In the corresponding Hittite text the determinative is used regularly with the Hittite ^mPurra. Thus the Hurrian noun is not translated but is simply transliterated by the Hittite translator (or a later scribe copying the text), who understood it as a proper name (this is the interpretation followed by modern scholars⁹⁷). Accordingly, just as in the previous cases, it is possible to understand Hurrian Purra (as well as the Hittite ^mPurra that renders it) as a proper name (probably originally meaning "Priest < Slave of the God"). But as shown by Neu, in this part of the story alone, the Hittite translation (which seems to have been written in the Middle Hittite period, much later than the Hurrian text) differs from the Hurrian original. In the latter Purra does not rejoice (*ši-in-zu-uh-ha-am-ma a-ni-ik-ki Pur-ra-a-bi* "in the second place (= on the other hand) Purra's [heart,

⁹⁵ Cf. Spelser 1941, 171-172; Laroche 1980, 174. See above on another view in Girbal 1990.

⁹⁶ Neu 1996, 444-445, 461.

⁹⁷ Neu 1996, *passim*.

mentioned only in the beginning of the whole passage] does not rejoice" [K Bo XXXII 15 I 22'-23']). The Hittite rendering gives the opposite picture: *ta-a-an pé-e-di-ma-kán A.NA* "Pur-ra a-ap-pa pí-an-ti ZI-ŠU an-da du-uš-ki[-iz-]zi "in the second place Purra, the one who is given back, rejoices in his spirit", *ib.*, II 23'-25'. Whatever reason may have led to this discrepancy⁹⁸, it is accompanied by two more differences between the Hurrian original and the Hittite version. In the Hittite text the determinative of a male personal name is inserted before Purra. At the same time the epithet *appa pīant-* "given back" (already cited in the passage discussed above) is added to this noun. It seems that the Hittite translator experienced difficulty in rendering the Hurrian text. One of the possible reasons might have been the use of the stem *purra* in the ancient meaning "Slave", going back to the primary Hurro-Urartian lexical item. As the Hittite scribe or translator knew only the derived stem *pura(m)me* in this meaning, it was not easy for him to grasp the meaning of the sentence, which may have originally meant "on the other hand the heart of the slave/the prisoner did not rejoice". The Hittite translator or scribe understood *purra* as the same proper name which he had met in another passage. And yet he added a Hittite epithet which hints at the general meaning of the word. Of course our present knowledge of Hurrian is no better than that of the hypothetical scribe. Thus the whole interpretation of this mistranslation remains highly controversial.

In connection to this Hurro-Urartian stem a suggestion can be made concerning a possible Etruscan parallel. It has been discovered that Etruscan names of slaves often contain as their second part the stem *-por(a)*⁹⁹ (see a parallel in the Urartian name cited above). Although the Etruscan noun designating "slave" is not yet known,¹⁰⁰ it can be supposed that the stem *-por(a)/pur-* might have been used in this meaning.¹⁰¹

⁹⁸ On the possible causes, see Neu, *ib.*, 332-335.

⁹⁹ De Simone 1970.

¹⁰⁰ Rix 1963; A. I. Nemirovskij 1983, 127-134.

¹⁰¹ Ivanov 1988, 212; the exact ethnic identity of Roman slaves having names like *Marci-por* = Latinized *Marci-puer* still remains controversial (on their "Thracian" character according to Georgiev, see Poghirc 1983, 57).

A probable connection to Latin *puer* "boy, lad, child, slave, servant" (cf. the typologically similar semantic connection of names for "slave" and "child" in Slavic and other languages) has been discussed on the basis of compound names like *Nae-por/Nei-pur/Naei-purs*.¹⁰² The word *puer*¹⁰³ does not have a good Indo-European etymology; it is often included in a group of words probably cognate with Sanskrit *pu-tra-* "son", Oscan *puklum*, Paelignian *puclois* "to the sons", Mars. *pucle[s]*, but this material may be derived from a root of onomatopoeitic (*Kindersprache*) character which might have been spread universally and cannot be studied by the normal comparative method.¹⁰⁴

According to Latin grammarians *puer et in feminino sensu antiqui dicebant... quod est antiquissimum carmen: mea puer...*¹⁰⁵ Starting with Mommsen this remark was used to explain the expression of sacred language *puer Iouis* "the child (= daughter!) of Juppiter" (Fortuna Primigenia) equivalent to the designation of the same goddess as *Diovo.filea = Iouis filiae* in a Praenestine inscription.¹⁰⁶ The expression seems close to such Urartian nominal phrases given above as "slave = servant of the God Haldi". For the first time in Vergil, the Latin noun *puer* appears as a prominent part of the usage in poetic vocabulary¹⁰⁷ comparable to Hurrian-Hittite epic: *puer* is used as a sign of

¹⁰² Ernout and Meillet 1994.

¹⁰³ II declension stem in short -ō: *pur-ō-s* > **puṛs* > *puer*, Ernout 1945, §26; cf. an archaic Vocative *puer-e*, Pl. *Pseud.* 241; *Merc.* 930, *Asin.* 382. If such a segmentation is deceptive, as Brent Vine suggests to me, from a purely descriptive point of view, the word is built with the *-ro- suffix. As the latter is non-productive in Latin, in this derivation an argument can be made for the relative antiquity of the term. But if the word had been an old borrowing it might have entered the group of archaic nouns in *-ro- due to later morphological reanalysis. On the reconstruction **puṛ-ero-* for the Latin word and on the other cognate Italic forms supposed to rely on *put-lo-*, cf. Hajnal 1995, 130-131, n.24.

¹⁰⁴ Cf. the similar case of Yagnobi *puṛ(l)a-* "child, boy" supposed to be either a result of the development of **puṛa-* or a "baby" word (Xromov 1972, 127-128), the onomatopoeitic character of the word's function being stressed in *pulla-mulla* (*pulla-mulla ast?* "has he got children at all?", ib., 93).

¹⁰⁵ OLD s.v. *puer*, 4b.

¹⁰⁶ Ernout 1947, n.14; Dumézil 1966, 68, 411; 1956, 3 essay, 71-98. For the reading *Diovo-filea* (not *filea*, Ernout et al.) see Wachter 1987, 216.

¹⁰⁷ The use of the word in the language of lyric poetry can be exemplified by some citations from Catullus. A grotesque usage of the word in earlier archaizing poetic style can be seen in *nec sapit pueri instar* "he has not as much sense as the child", Catullus XVII.12, Fordyce 1978, 143. In LXIV.95 the Vocative *sancle puer* "O sacred boy" is used in a prayer-like appeal to Amor (Fordyce, ib., 175; 291). The normal meaning is referred to in the description of the four states/ages of Attis in descending order

the main topic, repeated twice at the beginning and twice at the end of his famous *Eclogue IV* (8, 18, 60, 61).¹⁰⁸ The theme expressed by Vergil in *Eclogue IV* was probably similar to the Etruscan concept of time.¹⁰⁹ It may be supposed that such elements of Vergil's native Latin vocabulary as *puer* might have been connected to his old Etruscan Mantuan heritage.

This can be discussed in light of the controversial importance of the Etruscan (Mantuan) tradition for the great singer of the legendary prehistory of the tribe.¹¹⁰ Vergil's own words, which have been interpreted in different ways¹¹¹, definitely point to the extraordinary role of the Etruscan constituent in the strength of his native city (possibly uniting several multi-ethnic groups). The passage repeats and stresses the name of the city, arranging its phonemes in a complex anagram (the parts of which are underlined):

*Ille etiam patriis agmen cieꝝ Ocnus ab oris,
fatidicae Mantus et Tusci filius amnis,
qui muros matrisque dedit tibi, Mantua, nomen,
Mantua diues quis, sed non genus omnibus unum:
gens illi triplex, populi sub gente quaterni,
ipsa caput populis, Tusco de sanguine uires.*

In Mandelbaum's verse translation:

There, too, another chieftain comes who from
his native coasts has mustered squadrons: Ocnus,
the son of prophesying Manto and
the Tuscan river; Mantua, he gave you
walls and his mother's name — O Mantua,
so rich in ancestors and yet not all

at LXIII.63: *ego mulier, ego ado(= u)lescens, ego ephebus, ego puer* "I [am] a woman = castrated, I [was] an adult I [was] a young man, I [was] a boy"; cf. XII.9, *puer* as a designation of a young man as also in Hor. *Carm.* I.5.1; on this meaning in an archaic context see also Dumézil 1973, 310-311, n.3.

¹⁰⁸ Cf. Kettemann 1982, 513, see *pueri*, *Aen.* VI.832, in the similar context of addressing the future.

¹⁰⁹ Sordi 1964; 1989, 20-28, 78-79.

¹¹⁰ M. L. Gordon 1934; Nardi 1935; Holland 1935; Krause 1937; Enking 1954; Eden 1964-1965; Bloch 1967; 1972; Rawson 1978, 139; Timofeeva 1980, 25-26; Dury-Moyaers and Renard 1981; also Toporov 1993, 78 ff. (with rich bibliographical data). Among the gods mentioned in the *Aeneid* there are several of Etrurian origin, such as Saturn-(ia), Perotti 1990, 17-19.

¹¹¹ See particularly Rosenberg 1913, 129-132; Altheim 1950; A. I. Nemirovskij 1978, 143-145; 1983, 106-107; Dumézil 1979, 149-164.

of one race; for you are the capital
of peoples rising from three races, each
the rulers of four towns; but you yourself
have drawn your chief strength from your Tuscan blood.¹¹²

Recent archaeological excavations in Bagnolo San Vito near Mantua have confirmed the role of the ancient Etruscan element in the city, which according to a legend had been a center of Etruscan expansion to the north of the Po river.¹¹³ As to the Etruscan origin of the name of the city mentioned in Vergil's lines cited above, it can perhaps be traced back to Etruscan *manθva*.¹¹⁴

4. Names for "horse" in Hurrian, Northern Caucasian and Indo-European.

It seems that one of the first important results of the Mozan/Urkesh excavations, at least from the point of view of Indo-European studies, was the discovery of a beautiful sculptural image of a horse head dating from the middle of the third millennium B.C.¹¹⁵ From much later representations of horses, possibly continuing the same Hurro-Urartian tradition, one may particularly compare a bronze horse head from Karmir-Blur (VIII c. B.C.).¹¹⁶ Subsequent findings in Mozan/Urkesh have shown a number of horse figurines coming from the storeroom of Tupkish's palace (about 2200 B.C.), some of which represent the domesticated animal.¹¹⁷ These numerous figurines, which belong to the following period of the history of Urkesh in the last quarter of the III mil. B.C., make it clear that the horse was extremely important in the life of the

¹¹² Mandelbaum 1981, 250.

¹¹³ De Marinis 1986-1987; Moscati 1987, 161, 243.

¹¹⁴ Pallottino 1980, 247, 373; on mant(h)- see A. I. Nemirovskij 1983, 174; cf. also the name of the Etruscan goddess Manturna, Ernout and Meillet 1994. It might be interesting to compare the Urartian toponym Mantupa (Diakonoff 1951a, 42 (23); Arutiunian 1985, 135-136; on names in -na in Hurrian, see Laroche 1966, 354, and in Urartian, Meshchaninov 1925, 45), although the identity of geographical names in such distant areas is not easy to prove; cf. also Hurrian personal names and toponyms derived from mant-, Laroche 1966, 113, 350-352; 1980, 166.

¹¹⁵ Buccellati and Kelly-Buccellati 1988, pl. 1.

¹¹⁶ Piotrovskij 1962a, 341, fig. 44. Arutiunian 1964, 187, fig. 39. Other Urartian horse images: Khodzhash a.o. 1979, fig. 60, 124; Piotrovskij 1962b.

¹¹⁷ See the descriptions and drawings of the figurines in Hauser 1998.

society. Particularly interesting seem horse figurines showing the harness, thus documenting the use of horses in transportation.¹¹⁸

These unique signs of the economic and cultural role of the horse in the northern part of the Mesopotamian area on the border of Asia Minor can be compared to the previously discovered much earlier figurines interpreted by some archaeologists as images of the harnessed horse from the Balkanic area in the northwestern part of the Circumpontic zone¹¹⁹, as well as to similar figurines of horses in the Volga region of the IV mil. B.C.¹²⁰ Statuettes and vase drawings of horses and other signs of their importance as well as their bones are found in Mesopotamia (in Hafadzh, near Baghdad), Elam (Susa) and adjoining areas of Iran.¹²¹ But it is generally supposed that the horse penetrated into these more southern areas after its domestication in the northern Eurasian steppes. Chronologically close to the Near Eastern traces of a domesticated horse are bones of horses from Asia Minor of the Bronze Age period.¹²² For a comparison with the Mozan/Urkesh discoveries, data on the neighboring Norşun Tepe of a much earlier age¹²³ as well as on other places in Anatolia seem particularly interesting: Demirci Hüyük¹²⁴ and Yarıkkaya, where the horse appears in the second half of the IV mil. B.C. From this point of view it is interesting to compare data pointing to the early spread of horses in the Transcaucasian area, particularly adjacent Armenia (ancient Hajasa and Urartu)¹²⁵; the earliest trace of the horse in Georgia comes from Kvaxcelebi in the very beginning of the III mil. B.C.¹²⁶

¹¹⁸ Hauser, 1998.

¹¹⁹ Gheorghiu 1993; 1994 with references. The zoological interpretation of some figurines of quadrupeds (cf. for instance an item from Gavra-VI: fig. 109 in Childe 1950, 215) is not always clear.

¹²⁰ Kuz'mina 1996, n.63 (detailed references).

¹²¹ Noettes 1931; Hermes 1936a; 1936b; Potratz 1938; Wiesner 1939; Hančar 1955; Hänsel and Zimmer 1994.

¹²² Bökönyi 1978, 54; Piggott 1979, 10; 1983; Mellaart 1981.

¹²³ Zarins 1979, 60.

¹²⁴ Rauh 1981; cf. Boessneck and Driesch 1976; Bökönyi 1978, 54-55 (discussion of the possibility of domesticated horses).

¹²⁵ Mezhlumjan 1965 (with a suggestion for the domesticated character of the horse from the neolithic village of Shengevit); Esajan 1966, 119; 1994; Levine 1990, 731.

¹²⁶ Kushnareva and Chubanishvili 1970, 110.

The domestication of the horse (as well as its earlier use in cultic practice, which is not easily distinguishable from its later domestication on the basis of archaeological traces) is supposed by many scholars to have begun in the IV mil. B.C. (perhaps even earlier in the V mil. or at least at the cusp of the V mil. B.C.). The Caucasian Caspian area seems to be connected to the Lower Volga culture, where horse sacrifice and the horse cult are documented at a very early age (starting with the end of the V mil. B.C.).¹²⁷ Traces of ancient wild horses and perhaps of early horse-keeping and horse-breeding (and at least horse-hunting) are found in the Volga steppes, making them one of the probable areas for the domestication of the animal in the second part of the IV mil. B.C.¹²⁸ From the point of view of a monocentric idea of acculturation of plants and animals, as developed by N. I. Vavilov and his followers, a unique area of domestication seems probable, although it is not easy to establish with precision the differences between the wild horse (perhaps *Equus caballus Missii*) and the domesticated one.¹²⁹ The steppe region between Xvalynsk (in the Volga steppes) to the east, Dereivka (on the Middle Dniepr in the North-Pontic region) and perhaps also the Cucuteni-Tripolye culture to the west have been considered as a possible area of horse domestication as well as a homeland of the Indo-Europeans, whose spread has as a possibility been connected with the use of horses.¹³⁰ In Dereivka many horse bones have been found (probably showing, as M. Levine has recently suggested, that this was the favorite food of the population and a main object of hunting). The supposition of bit microwear on the premolar teeth of a stallion from Dereivka¹³¹ has become a *Paradebeispiel* of a trace of early domestication. It is suggested that early horseback

¹²⁷ Vasiljev and Siniuk 1985; Gamkrelidze and Ivanov 1984/1995, I, 476; Kuz'mina 1996, 82-83 with references.

¹²⁸ Bibikova 1967; 1969.

¹²⁹ Cf. Bogoljubskij 1979; Bökönyi 1974; 1978; 1980; Matolci 1973; Uerpman 1995; Adams, Mallory, and Miller 1997.

¹³⁰ Anthony 1986; 1991, 209-213, fig.1-3; 1994; 1995. For details of the Dereivka findings, see Telegin 1986. For a critical appraisal, see Häusler 1994; Uerpman 1990; 1995; Levine 1990; Mallory 1981.

¹³¹ Anthony and Brown 1991a; Anthony 1991, 204. But the direct non-calibrated radiocarbon dating of the skull of this stallion gives 2950 ± 100 B.C. (Telegin 1995, 11), which does not correspond to the other chronological hypotheses concerning Dereivka (Mallory 1997a; Adams, Mallory, and Miller 1997, 275-276).

riding originated in the same area, leading to enormous changes in the means of transportation.¹³² Still the evidence seems scanty. In Dereivka a change in the teeth was found in one stallion, but comparable results are reported in only 10% of horse premolars from Northern Kazakhstan in the second half of the IV mil. B.C.¹³³ A question of a general character needs to be solved in connection with these findings. Specialists in hippology insist on the necessity of a friendly attitude towards the horse, seeing in it a necessary prerequisite to successful domestication and safe riding.¹³⁴ Is it possible that the early stages of domestication of the horse were dominated by the opposite cruel attitude (probably simply due to lack of experience)? If not, then the damaged teeth point to the cultic use of the horse, which might have been severely bitten before a sacrifice.

Early data on the spread of horses have been found to the west of the Black Sea on the Balkans as well.¹³⁵ Moreover, it seems possible that not only the whole Pontic-Caspian area but the neighboring parts of the Southern Urals, Kazakhstan and Western Siberian¹³⁶ regions as well may have been important for the early use of the horse as a preferred object of hunting and the main cultic animal, later leading to its domestication.

¹³² Sherratt 1983; Sherratt and Sherratt 1988; Anthony and Brown 1991b; Anthony 1994; 1995 (with maps and tables).

¹³³ Anthony 1995. On the basis of experimental studies it has been suggested that the stallion was bitten over a period of no less than 350 hours of riding (Anthony *ib.*, 559) (for the interpretation using methods of experimental archaeology, see Spruytte 1977; Antony *ib.*).

¹³⁴ Starke 1995, *passim*.

¹³⁵ Semenov 1974, 294; Bökönyi 1974; 1978; Gheorghiu 1993; 1994; Häusler 1994. On the other parts of Europe, see Ürpermann 1990; Benecke 1994; Østmo 1997, 288 (with bibliography).

¹³⁶ Levine 1990. It seems possible that the domestication of an Eastern Asiatic type of wild horse has been reflected in the name widely spread in Sino-Tibetan languages (**mrāh*/*mrān*) and borrowed into the other languages of Eastern and Southern Asia (Polivanov 1928, 52-54; 1968, 123, 337-338; Gamkrelidze and Ivanov 1984/1995, I, 471, 832; Peiros and Starostin 1996, 35-36 (N 126)); on Nahali *mav* "horse" and Dravidian terms (Tamil *mā* "horse" *a.o.*), cf. Burrow and Emenau 1986, 425, N 4780; on the words of Indo-European languages possibly connected to this term, see below. The problem of the precursors of the later Petrovka and Arkaim-Sintashta metallurgical city culture of the II mil. B.C. seems particularly interesting, for which Iranian parallels have been suggested (Zdanovich 1988; 1989; Kuz'mina 1997, 87-88 (bibliography)). According to the typology established by Childe, metallurgy is needed for work on chariots.

It is hardly possible that only one linguistic group participated in this achievement. Some types of domesticated animals were borrowed with their names¹³⁷ (thus the spread of the Eastern Asian name, like Sino-Tibetan *mrāH/mrāṇ, can be explained). No matter where and when exactly (in the IV-III millennia B.C.) the horse had been domesticated in this large area, according to Hančar's work and some recent studies¹³⁸ it is only with the beginning of the II mil. B.C. that we find direct evidence of its military use to draw chariots in the Ancient Near East; to the same period belonged the looped rods which had earlier been identified as bridle-bit cheekpieces.¹³⁹ Before that period the proto-chariots (without yokes, poles and spokes) were drawn by oxen¹⁴⁰ (indications about these older devices are also found in the descriptions of battles in archaic Hurrian mythological poetic texts, particularly in the Song of Ullikummi from the God Kumarbi Cycle).

The Hurrian data found by the Mozan/Urkesh excavations are quite exceptional from this point of view. Here for the first time the use of horses in a palace economy and everyday life is documented in the last part of the III mil. B.C. (also in connection with the more advanced type of chariots¹⁴¹). In the beginning of the next millennium the role of horses as well as of special officials (*RABI ŠÍ. ŠÉ. E*) who were in charge of them is known through Old Assyrian tablets from Asia Minor.¹⁴² An archaic Hittite poem (originally composed in the old capital of Nesa = Kanish) mentioning the god Pirwa belongs to approximately the same period (known through a copy from a later

¹³⁷ Thus the Indo-European homeland need not be identical to the area of horse domestication, but should be connected to it. The ways in which names and technical knowledge (particularly of training devices, Starke 1995) spread should be explored.

¹³⁸ Hančar 1955; cf. Bosch-Gimpera 1961, 71. For the same view, see Levine 1990; Trifonov 1987, 26, n.28.

¹³⁹ Trifonov 1994, 358; detailed literature in Kuz'mina 1996, 84, 79-81 (arguments against the early spread of horseback-riding, which still do not seem to contradict the assumption of primitive horseback-riding as a possible initial step of domestication).

¹⁴⁰ On Littauer's point of view, see Anthony 1995.

¹⁴¹ Häuser 1998.

¹⁴² Kammenhuber 1961, 13 with references. On the meaning of this Old Assyrian term (probably "an official in charge of charioteers"? cf. Starke 1995, 121, n.244; Jankovskaja (1968, 38 and 220) suggested the meaning "chief of stall-keepers".

period). In Hittite texts the god is described as being connected to the horse¹⁴³, and his name can be traced back to an Indo-European one.¹⁴⁴ Theophoric names containing this element are well represented in Old Assyrian tablets. The military function of chariots drawn by horses is first attested in the Old Hittite inscription of king Anitta.¹⁴⁵ The outstanding role of the horse as a primary domestic animal and terms connected to its training are well documented in the old version of the Hittite laws.¹⁴⁶ Although it is not clear to what extent Hurrian cultural influence could be found at this early stage in Asia Minor, in the next period horse-training in the Hittite Empire was apparently at least in part influenced by the Hurrian-Aryan Mesopotamian tradition of Mitanni. The Hittite hippological texts of this time are composed by Mitannians using Mesopotamian Aryan and Hurrian (also Luwian) technical terms.¹⁴⁷ In the light of the Mozan/Urkesh discoveries it seems possible that this Mitannian tradition was not determined only by Aryan influence but might also to some extent continue older Hurrian customs, since the Urkesh period precedes this Hurrian-Aryan symbiosis of the second millennium B.C. However, linguistic data suggest earlier contact between Hurrian (and/or possibly Northern-Caucasian) and Indo-European in this particular branch of activity.

¹⁴³ Kammenhuber 1961, 36, n.142; Otten 1952-1953; Haas 1994, 412-425, 499, 782 a.o. (with bibliography). In later Hittite texts, besides a sacred horse, Erama, a deified horse (written logographically ⁹ANŠE.KUR.RA "the God-Horse", K Bo XX 245 I 5'), in the (H)išwa festival is mentioned (Haas 1994, 417, 856, n. 32). But the name of the god is missing here as well as in many places where the horse deity is meant; see the chapter on horse deities and horse cults in the recent handbook by Haas (1994, 412-428).

¹⁴⁴ Gamkrelidze and Ivanov 1984/1995, 695-696.

¹⁴⁵ Hrozný 1929; Neu 1974; Starke 1995, 121, 124, n.244.

¹⁴⁶ Gamkrelidze and Ivanov, *ib.*; Starke 1995, 125. The specific character of sexual laws concerning horses (cf. Puhvel 1987, 167) may not be only a trace of ancient ritual customs but may also point to a symbiosis possibly characteristic of an early stage of primitive domestication of horses (see below on the Indo-European verb with the meaning "to rape, to domesticate"); cf. also the role of the ass, a sexual object as seen in the old Hittite Zalpa story and reconstructed by Freidenberg for different ancient cultures (cf. Ivanov 1997, xii).

¹⁴⁷ Kammenhuber 1961. On the relationship between native Hittite, Luwian, Hurrian and Aryan traditions in connection to hippology, see Starke 1995. The habit of praising good Urartian trainers of horses is still evident in the remark in Sargon II's tablet about an area of Urartu (Subi) famous for just this ability of its inhabitants, Diakonoff 1951, 167; cf. Arutunian 1964.

The Hurrian name for “horse” is of utmost importance for this problem as well as for the whole question of Indo-European origins and migrations insofar as it is related to the domestication and use of horses.¹⁴⁸ The name was deduced by Otten from a fragmentary Hurrian-Luwian-Hittite bilingual text belonging to the hippological cycle. After a short Hittite introduction a Hurrian passage mentioning horses (*iš-ši-ya-na-a-ša*) is introduced, followed by a Hittite translation of a corresponding Luwian fragment where horses are designated by a Sumerian logogram (KUB XXIX 44 + 48 + 55 + K Bo VIII 50 = CTH 285, 1 Vs. I⁴⁹):

- 4 I.NA É LÚ.MEŠ IŠ (= iš- for išmeriyaš?¹⁵⁰) -kán an-da-an [...]
 - 5 ši-pa-an-taḫ-ḫi nu ḫPí-ri-i[n-ka]r [ḫIŠTAR]
 - 6 ḫal-zi-iḫ-ḫi nu ḫur-li-l[i ki-iš-ša-an]
 - 7 iš-ši-ya-na-a-ša pa-a-a[ḫ-ri-e-e?¹⁵¹]
 - 8 ḫPí-ri-in-kar ḫIŠTAR
-
- 9 lu-ú-i-li-ma-at ki-i[š-ša-an]
 - 10 A.NA ANŠE.KUR.RA^{HLA} an-da aš-š[u-li]
 - 11 ar-du-ma-at

In the house of the coachmen [...]¹⁵² = in the stable¹⁵³ I am delivering a prayer accompanied by sacrifices. And I am addressing Pir[inka]r (and) [(Hurrian) Ishtar (= Shaushka)]. And I am [speaking in] Hurrian [in the following way]: “Pirinkar (and)

¹⁴⁸ Hänsel and Zimmer 1994.

¹⁴⁹ Otten 1953b, 13; 1953a, 24-29; Rosenkranz 1952, 3-4; Kammenhuber 1961, 150-151; Starke 1985, 370-371. The text presents a later copy of the original dating from around the XIV century B.C. On the interrelationship of Hurrian and Luwian elements with respect to this text, see Starke 1995, 123 and n.252.

¹⁵⁰ According to a suggestion by Rüter and Neu 1989, 162, the cuneiform sign for LÚIŠ “charioteer, coachman” probably stands for the first syllable iš of a Hittite metonymic Genitive LÚišmeriyaš “man of the bridle, a palace official” (on the meaning and suggested Indo-European etymologies, see Puhvel 1984, 429; Gamkrelidze and Ivanov 1984/1995, 626; Melchert 1994, 155).

¹⁵¹ A damaged continuation of the Hurrian stem [fahr-] “good” should contain one of its derivatives, cf. for those forms which appear in the texts: Laroche 1980, 292-293; Neu 1996, 66, 252, 434.

¹⁵² A lacuna may be absent, Kammenhuber, ib.

¹⁵³ Cf. Urartian É (ʔ)šur-i[š](ʔ)-hi for which the meaning “house belonging to šur-i” = “stable” has been suggested, Melikishvili 1960, 206 (with references), a Karmir-Blur inscription on the harness N 118a. The unclear character of the form and meaning of the Urartian word makes any comparison to Proto-Northern Caucasian *xwǝrǝ “bridle” too tenuous.

(Hurrian) *Isht[ar] (= Shaushka)! [make] the horses prosp[erous]!*" And in Luwian I [am speaking] in the follow[ing way]: "for the prosperi[ty] of the horses apply yourselves!"

The interpretation of the divine name Pirinkir (which is also connected to horses and to the stable in the festival CTH 644¹⁵⁴ and is considered to be a *Pferdegottheit*¹⁵⁵) was given by Laroche¹⁵⁶ on the basis of the lexical equivalencies in a Meskene/Emar list An:

N 185 NIN.SI₄.AN.NA = ^DWi-re-en-gi-ru-un

N 205 U₄.UG = ^DBi-re-en-gi-ru-un

N 206 U₄.UG.URU.KI = ^DBé-re-en-gi-ru-un ar-ta/du-ma-an-zi

Thus the goddess P/Wirinka/ir- *[Firinki/ar] arta/(du)manzi ("of the city") who appears in Hurrian Boğazköy texts in the sequence allai ^DPirinkir "the lady [.] Pirinkir" (KUB XXXIV 102 II 12) was identified with the Mesopotamian "(Great) Lion(ess)" (one of the images of Mesopotamian Ishtar-Inanna¹⁵⁷) and with the Babylonian goddess Ninsianna, who was considered to be the planet Venus and was also quite similar to Ishtar or one of her *avatars*.¹⁵⁸ The image of a shining astral body explains why in the Boğazköy texts the goddess Piringar is a solar disc (KUB XXIX 71 I 13). She appears (as in the passage just cited) as belonging to the group related to Ishtar (Hurrian Shaushka, designated by the Mesopotamian logogram for Ishtar). Both deities are bisexual in Mesopotamia (in one Old Babylonian letter¹⁵⁹) as well as in Asia

¹⁵⁴ The horses seem to be the central symbol of the festival: KUB XXIX 56 + K Bo VIII 54; 83 + K Bo X 44 + K Bo XXXIV 172 + V Bo T 128 + KUB LI 14 + KUB LIV 43, cf. Kammenhuber, ib., 40-41, n.4; Haas 1994, 416, n.36.

¹⁵⁵ Haas 1994, 415-416.

¹⁵⁶ Laroche 1980, 201 and 54; 1989, 10 (spelling Wirengirun), N 206 corresponds to ^DUM ^DALI^{KI}, ^DUD.UG = ^DUMU, cf. important comments in Güterbock 1982, 35; Haas 1994, 415, n.32 (all the references in these publications are to the quotations from the list in Laroche).

¹⁵⁷ See Fauth 1981; Wolkstein 1983, 84-85. On the images of lions in connection with Ishtar see also Trifonov 1987, 23 with further references.

¹⁵⁸ Langdon 1926, 18, n.1, 26, n.4, 28, n.4, 30, line 16, 42 with references.

¹⁵⁹ Güterbock, ib., with further references; on Hurrian Ishtar, cf. Archi 1977, 299 ff.; Wegner 1981; Beckman 1983, 222-223.

Minor: in Yazılıkaya Pirinkir belongs to a group of male gods according to Laroche and Güterbock (n.31).¹⁶⁰ In her female form she may be harmful¹⁶¹ (related to sorcery and to the "curse" – Hittite *ḫurtiyaš*, K Bo XXI 41 + Ro 69) and is connected to the temple of the Black Goddess.¹⁶² Her identification with a lion(ess) seen from the Meskene lists cited above was used by Laroche to explain the origin of her name. He suggested a phonetic change PIRIG.GAL > Hurrian Piringir¹⁶³; Haas links the name to the highest goddess of the Elamite pantheon of the III mil. B.C. (known also in Neo-Elamite inscriptions) Pinikir.¹⁶⁴

As suggested by Laroche, the temple that had been built by Tish-atal was dedicated to the deity PIRIG.GAL, the Hurrian interpretation of which is given by the list from Meskene/Emar. His inscription cited above after introducing his title says according to Laroche's reading: pu-ur-li PIRIG.GAL pá-'à-āš-tum "he built a house = temple of the god(ess) Great Lion(ess)"¹⁶⁵, where the interpretation of the last verbal form as a

¹⁶⁰ Güterbock 1982, 35, fig. A and C.

¹⁶¹ Cf. Langdon 1926, 26, line 16.

¹⁶² Kronasser 1963, 241; Haas 1982, 180; Beckman 1983, 169, 182, 187-188.

¹⁶³ On the synchronic identity of the Sumerian logogram and the Hurrian name of the deity, see Laroche 1980, 201; that identification was also accepted by Güterbock, ib. On variants of the name, see Haas and Wilhelm 1974, 179. For Laroche's diachronic explanation of the origin of the Hurrian name as a reshaping of the Sumerian one, the only possible difficulty consists of the final part of the word following the name of the lion(ess). Perhaps one may also think about a possible morphological adaptation, see the type of Hurrian names like Fazanigar, Neu 1996, 364, cf. also Pizikarra (ib., 592: index s.v.) reminiscent of Piringar (*firiṇa/ir may be an interpretation in the old Hurrian period, cf. the variants Pi-ri-ki-ir/Pi-ri-ki-ir).

¹⁶⁴ Haas 1994, 415 (with references). For a plausible semantic comparison to the Hurrian-Hittite Pirinkar the connection to the sky is important, cf. in a Neo-Elamite inscription: ³Pi-ni-gir ki-ik-ki gi-li-ir-ra "the goddess Pinigir who governs this sky", König 1965-77, 71 A+B; Grillot-Susini and Roche 1987, 62. Having in mind the possible Elamite-Dravidian relationship (cf. Diakonoff 1967, 108-112; Macalpin 1981) one may also cite Tamil *piṇṇāka* "greatness, height" from the root of *peram* "greatness", Burrow and Emenau 1986, 392, N 4425. But there are other possible etymologies for the Hurrian name of this goddess. As another plausible interpretation one might have considered a combination of Piring with Nagar mentioned in the following part of the same inscription of Tish-atal (see Wilhelm 1998): Piring + Nagar > Piringar?

¹⁶⁵ Cf. Parrot and Nougayrol 1948, 14; Diakonoff 1967, 444; Xachikian 1985a, 90; Nozadze 1978, 28, n.44; before the Meskene/Emar discoveries (Laroche ib.) all the scholars followed the Hurrian reading of the divine name as Ner(ī)gal as Haas 1994, 542 (on the same name in the Araphe region, see ib., 544) still does although he cites Laroche's findings. See also remarks against the reading PIRIG.GAL in Wilhelm 1998 where the reading Nergal is likewise accepted.

transitive perfect (< participle) is confirmed by the equivalence Hurrian *pa-aš-tu-u-um* = Hittite *ú-e-te-et* "he (has) built it" in the bilingual text K Bo XXXII 15 Rs. 35-40, 48-49 = 41-47, 50-52.¹⁶⁶

The main objection that has led many scholars to accept the reading *Nergal* instead of *PIRIG.GAL* concerns the geographical and temporal differences in the attestation of the name (see Wilhelm 1998). But there is still the possibility that a very long Hurrian tradition was connected to it.

In light of the recent Urkesh excavations and Meskene lists, it can be suggested that the role of horses and their images near the temple (according to Laroche's hypothesis) of the Great Lion(ess) in Urkesh might have been connected to the beginning of this old tradition still continued in the Hurrian hippological rite of the XIV c. B.C. cited above. Such characteristic symbols as the image of a reclining lion on the seal of Tupkish, the Hurrian king of Urkesh¹⁶⁷, as well as of the image of a star on the seal of the Urkesh queen may be connected to the iconography of Mesopotamian Inanna-Ishtar of approximately the same period.¹⁶⁸ The bronze lions of Tish-atal, in connection to which the inscriptions of the king were written, seem to represent the lion(ess) image of the goddess. As for the Hurrian goddess Shaushka designated by the logogram of Akkadian Ishtar, there are many indications of the ancient connection of this Mesopotamian and Anatolian goddess to the horse.¹⁶⁹ From typological studies of militant goddesses of the type of Hurrian Shaushka, some of whom have a lion-like image¹⁷⁰, it is known that one original cult may be split into several deities at late stages of the development of the mythology.¹⁷¹ The Great Lioness was originally only one of the avatars of Ishtar. Thus for the Urkesh period it is probable that the Hurrian reading of logographic *PIRIG.GAL* (if one accepts Laroche's interpretation) might

¹⁶⁶ Neu 183-185. On the structure of the sentence cf. also Wilhelm 1998.

¹⁶⁷ Buccellati and Kelly-Buccellati 1996.

¹⁶⁸ See for instance, Williams-Forte 1983, 189, fig. 52; 92, fig. 92; 195, fig. 100; 196, fig. 102.

¹⁶⁹ Leclant 1960; Cornil and Lebrun 1972, 13-14; Haas 1994, 414-415; Levi 1951.

¹⁷⁰ Diakonoff 1990, 100, 145, 158, 159, 170, 215 a.o.

¹⁷¹ *Ib.*, 229, n.129; Goetze 1974, 132-134, Laroche 1980, 321, on the number of avatars of Ishtar; on the previous literature on Ishtar the Destroyer, cf. Ivanov 1997, xiii-xv, n.3.

have been *Šauška which was at the same time *Firiṇar. But more than half a millenium later the Hittite translation uses the verbal form of the Second Person Plural while addressing both Pirinkar and Ishtar = Shaushka; they have become two separate deities retaining the link to horses.¹⁷² It is possible that the latter may be explained by the military usage of horses important for the militant goddess. Since in the time of the Hittite Empire Shaushka protected mainly or only the members of the ruling Hurrian dynasty¹⁷³, it might be interesting that Hattushili III in his biography while praising the protective force of Hurrian Ishtar begins his career as “a man of the bridle”. Both this official position of his as a young prince and his lifelong obedience to Ishtar may reflect the ancient Hurrian tradition.

The Hurrian Dative Plural form iššiyanaša “to the horses” in the ritual text quoted above contains a postposed (suffixed) definite article and a morph of the Plural. The stem išši- “horse” has an initial vowel i-. Most of the other cases in the Boğazköy texts have an initial vowel e- written with *Pleneschreibung*: the Ergative Singular with a suffixed article e-eš-še-e-ne-e-eš “by the horse (as an active agent)” (K Bo XI 19 Vo 17); an Absolutive Singular e-eš-še-ni-e- (+ the associative-enclitic ma, K Bo XXI 18 10); a Comitative (e)-eš-ši-ra in a list of weapons and other military objects (K Bo XV 1 IV 23, 37). Thus the main Hurrian shape of the stem may be eš-ši- [eš-šə]; the corresponding Urartian noun is always hidden under logographic writing or its Akkadian complement as in ANŠE. KUR.RA^{MEŠ}-Ū-Ū “horses” (= SISŪ^{MEŠ}).¹⁷⁴ Since the meaning of the Hurrian word was discovered, it has been supposed that it was an old borrowing from an Indo-European satəm dialect.¹⁷⁵ Although this still remains a

¹⁷² Still in describing the ritual for the goddess, Laroche (1971, 126-127 [CTH N 718 with references]) spoke of one deity “Ishtar-Pirinkir”; in the recent computerized version of CTH by B. J. Collins (<http://www.asor.org/HITTITE/CTHHP.html>) a neutral spelling ISHTAR pirinkir was accepted.

¹⁷³ Laroche 1966, 293.

¹⁷⁴ The context is not clear: Melikishvili 1960, 158-159.

¹⁷⁵ Otten 1953a, 25; Dzhaukian 1967, 52, 181, n.61.

possibility, the situation now seems more complicated and the importance of this word more evident.

First of all it was supposed that the Hurrian name for the horse might be related to the Northern Caucasian one reconstructed as **h̥r[n]čwī* on the basis of Lezghi **ʔinšw* > Lezghi *šiw* "steed", Archi *noiš* "horse" (with a probable metathetic initial **n-* and an original weak **-šw* seen in the Ergative form *niiš-i*); Avar-Andi **ʔičwa* "horse, mare" > Avar *ču* "horse", Andi *iča* "mare", Akhvakh, Tindi and Karata *ičwa* "mare"; Lak *čwu* "horse", Khinalug *pši* "horse"; North-Western Caucasian **čwə* > Abkhaz *a-čə* "horse", Adyghe *šə* "horse".¹⁷⁶ To accept this Northern Caucasian etymology of the Hurrian word one must suppose that the nasal phoneme had been dropped at an early stage (as in most Northern Caucasian dialects, which makes its reconstruction controversial), since the group **-nd-* would have been expected otherwise (see above, section 1 of the present article).

If the Hurrian form is traced back to this Northern Caucasian prototype its relationship to Indo-European can be seen in light of the general problem of the terms of cattle-breeding, agriculture and related semantic fields shared by these linguistic families. In a special work on this subject Starostin suggested that all these terms were borrowed from Proto-Northern Caucasian (or from a dialect of it) into Proto-Indo-European in the beginning of the V mil. B.C.¹⁷⁷, perhaps in the area of the Near East to the South of the Transcaucasus¹⁷⁸; thus the term "Northern Caucasian" has only a traditional conventional meaning since the protolanguage of the family was spoken

¹⁷⁶ Nikolayev and Starostin 1994, 520; Diakonoff and Starostin 1986, 34; 1988, 179, etymology 67; Trubetzkoy 1930, 277, etymology 50; Starostin 1987, 458. Blažek 1992, 10, also suggests a link between the Indo-European and North Caucasian word with the Yeniseyan **ku*'s "horse" (understood by him as a second part of a compound), but see its explanation as a borrowing from a centum Indo-European dialect: in Gamkrelidze and Ivanov 1984/1995, 832, n.2, and another North Caucasian etymology: Starostin 1995b, 240. The ancient Northern Central Asian area of the homeland of Proto-Yeniseyan (as seen through hydronyms) seems to lie near the region of the early domestication of horses.

¹⁷⁷ Starostin 1988, 153-154.

¹⁷⁸ Starostin 1985, 89.

in this Southern area. Among the forms discussed in this way Starostin also enumerates the Northern Caucasian and Indo-European terms for the horse.¹⁷⁹ There are several questions that should be discussed in connection with this particular group of words.

First, the borrowing of the name for horse (as for many other domestic animals) should be motivated by its domestication. Although distinguishing between the names for wild and domesticated horses is indeed not easy¹⁸⁰, the fact of borrowing still points in this very direction and helps connect linguistic and archaeological data. There is no reason to borrow a name for a wild horse. But immediately after its domestication the name is borrowed together with the necessary technical knowledge. Archaeological data make it possible in the III mil. B.C., less probable in the IV mil. B.C., but no earlier (see the references above). In linguistic terms this means that the borrowing might have come through the dialects of the protolanguages which should have been dispersed by that time. But in that case Starostin's main argument for the direction of borrowing (from Northern Caucasian into Indo-European and not the other way) loses its force, since it applies to the bulk of the oldest borrowings and not to one isolated loanword. For all of them Starostin notes the absence of a special subsystem of simpler phonological rules in Northern Caucasian.¹⁸¹ No matter how valid this reason for the bulk of the borrowings might be, it does not seem relevant for a name for horse if it were borrowed much later. In this case one should take into consideration the phonetic correspondences. The fricative šš [ʃ] in the Hurrian name for horse and a corresponding affricate *č (> š) in the forms of the other Northern Caucasian dialects correspond to a Proto-Indo-European palatal stop *k which became an affricate *č and then a fricative š/s in Indo-European dialects of the satəm type. The same correspondence is seen in the other

¹⁷⁹ Starostin 1985, 77, etymology 13; 1988, 114-115, etymology 2.

¹⁸⁰ Hamp 1990; Mallory 1996, 9.

¹⁸¹ Starostin 1988, 153.

borrowings discussed by Starostin.¹⁸² If he is right and there was a system of regular correspondences in an ancient period, it might be that a Northern Caucasian affricate absent in Proto-Indo-European might have been reinterpreted as an old palatal. But for a later dialect of the *satəm* type which should have existed in the III mil. B.C. (and possibly even earlier), one may think in terms of borrowing forms with affricates and/or fricatives from one dialect into another or from a third language having a similar system of affricates and/or fricatives (see below on Semitic); as an example one may cite the word for "left side" discussed in the first section of the present article. In that case the direction of borrowing can only be from a Proto-Indo-European dialect of the *satəm* type into a Northern Caucasian dialect, since otherwise the existence of a parallel Proto-Indo-European *centum*-dialectal form would have remained mysterious. As to the latter, if such a dialect (of the *centum* type) were in contact with a language having affricates and fricatives, a system of equivalences like the one suggested by Starostin might have been created (at some later stage of history as well). Such synchronic equivalencies, created in a situation of bilingual contact, are artificial from the point of view of diachronic "natural" phonetics describing usual processes inside a single language. Historical development means a choice between several existing options, each of which obeys typologically valid laws. From the point of view of such general typology the phonetic development of a palatal or palatalized velar stop to an affricate and fricative is a normal one; but the reverse movement from an affricate of the dental type to a velar stop seems quite extraordinary, although to bilingual speakers the equivalency of these phonemes may be obvious.

In connection with the Indo-European name for the horse the idea of borrowing has often been suggested because of the phonological difficulties in comparing the dialects.¹⁸³ In fact, two quite different, if not completely incompatible forms can be reconstructed for Indo-European:

¹⁸² Starostin 1985, 92, n.28; 1988, 145-148.

¹⁸³ E.g., Lehmann 1986, 15; 1993, 247.

1. The form $*(H_1)ékwo-$, with an initial vowel $*e$ and an original palatal stop $*k + w$ ¹⁸⁴, existed before the change of palatals in the *satəm* area and is common to all the dialects including Luwian (the Hittite, Armenian, Albanian and Slavic data are not clear) with the exception of Greek. For Proto-Indo-European and for the earliest periods of the history of its dialects, the original stage before the split into *centum* and *satəm* groups might be reconstructed as palatalized stops.¹⁸⁵

1a. *satəm* dialects:

I. Eastern Indo-European. Indo-Iranian (Aryan).

A. Mesopotamian Aryan *-ašwa-* in composite proper names: *Bi-ri-ya-aš-šu-wa* in *Alalah* (= *Piriyašba* in the Elamite/Iranian rendering of the name, $*priyá + ašwa-$), *Bi-ri-da-aš-šu-wa* = $*Pritá-ašwá-$ in *Yanuamma* (perhaps the combination goes back to Proto-Aryan: it has been compared to Vedic *pri-ṇā + aśvān*, *priṇātāśvān* "(you) show your love for horses!" (*R̥g-Veda* X.101.7), which in its turn had been identified with the Avestan compound proper name *Frīn-āspa-* "whom the horses like"¹⁸⁶; probably also *aššu-* (as the second part of a hybrid Hurrian-Aryan compound with a Hurrian postfixed article *aššu-ša-nni* "horse-master", the second element of the suggested compound still remaining unclear¹⁸⁷).

¹⁸⁴ Hamp 1990; Meid 1994; Adams, Mallory, and Miller 1997, 274; on the reconstruction of the accent on the initial syllable, see Lubotsky 1988, 93-94. On the basis of laryngealists' general avoidance of initial vowels a laryngeal (H_1) is reconstructed in the beginning of the word (e.g. Lubotsky, ib.; Hamp, ib.; Blažek 1992, 10; Watkins 1995, 12; Andersen 1996, 148). Probably this may run contrary to the real history of the term if it appeared after the loss of laryngeals at least in some dialects.

¹⁸⁵ On Old Indian, Nuristani and Indo-Iranian, see Morgenstierne 1945; Ivanov 1958; Thumb-Hauschild 1958, 203, 283-285 with references.

¹⁸⁶ Bartholomae 1979, 1025-1026; Mayrhofer 1979, 65-66; 1982, 80; Gindin 1993, 161-163 with further bibliography. Another explanation may be based on a possible comparison with Old Indian *Bṛhad-aśva-* "Big Horse".

¹⁸⁷ Bailey 1957; Mayrhofer 1959, 6-14; 1966; 1974; 1982, 75-76; Kammenhuber 1961, 19, n.73; see below on an attempt to deduce the word from Luwian. On its borrowing into Akkadian and later history in this language, see Ebeling 1951, 11, n.5.

B. Indo-Aryan: Old Indian *ásva-* "horse", *ásvā-* "mare"¹⁸⁸, Marāthī *āsupāthī* "on horseback"; Dardic: Kalasha *haš*, Gilgiti dialect of Shina *āspū*, Kohistānī dialect of Shina *āšp*, Gurēśī dialect of Shina *āšap*, Palēśī dialect of Shina *āšpō* "horse, mare", Brokpā dialect of Shina *apš*.

C. Nuristani Kati *w/vušúp/(v)úšup* "horse" (Direct Case); *vúš (u)p-a* (Indirect Case, Masculine Gender), *ušp-á-sti* (Possessive Singular); *vušp-o* (Plural), *vúšp-o-šti* (Possessive Plural).¹⁸⁹

D. Iranian: Avestan *aspa-* "horse", *aspā-* "mare", *asp(a)ya-* "belonging to horses, equine"¹⁹⁰ (from Proto-Aryan: Old Indian *aśv-[i]ya*), *aspō.stāna-* "horse-stable" (from Proto-Aryan: Old Indian *aśva-sthāna-*, Dardic Shina *aštōn* "groom" > Burushaski loanword *aštān*¹⁹¹), in compound proper names like that of the father of Zarathustra *Pourušaspa-* (from *pouruša* "grey" + *aspa-*).

North-Western Iranian: Midian **aspa-* (in a Midian borrowing in the Old Persian proper name *Aspa-čanah*¹⁹², the Midian name of an Old Persian king *Vištaspā*¹⁹³); a probable northwestern form of Midian type is reflected in Modern Persian and Tadžik *asp* (borrowed into many other dialects).

¹⁸⁸ The derivative with feminine suffix **-H* preserves the accentual scheme of the barytone primary noun, Lubotsky 1988, 102.

¹⁸⁹ Turner 1989, 40, N 920; on the use of the forms of the Kati noun, see Grünberg 1980, 42-43, text II, blocks 4-7 (description of Nuristani ritual horseraces in this and subsequent Kati ethnographic narrations are important for comparison to other Indo-Iranian and Indo-European traditions, including Hittite); 49, text V, blocks 4-5; 60-61; text VIII, blocks 1, 4-6; 115, text XV, blocks 3-4; 154-155, sentences 138-139, 141-145; 175-176; 186; 198; 203; 258; 267. The Dardic and Nuristani sound shapes for horse names are possibly due to the later spread of the Northwestern Iranian type of the word, but see below on the initial phoneme.

¹⁹⁰ Bartholomae 1979, 217.

¹⁹¹ Turner 1989, 41. On Avestan, see Bartholomae, *ib.*, 219.

¹⁹² Bartholomae 1979, 217; Efimov 1986, 80.

¹⁹³ Modern Persian *Gušāsp*, Bartholomae, *ib.*, 1473-1474; Milewski 1969, 171-172.

Beludzhi (h)asp, Kurmandji dialect of Kurd h'asp¹⁹⁴; Talysh and Gilyan asp/asb; Mazendran, Sangisari, Lasgerdi, Shemerzadi, Yarandi and Farizandi asb, Semnani and Nayini äsp, Surkhei äsb, äsm, Bijabuneki and Vonishuni asp, Keshei and Zefrei asm, Yazdi asb/äsp, Natanzi asm/asb, Soi äs (with loss of the final *-p preserved in intervocalic position in comparable forms), Xunsari äsb, Parachi ösp¹⁹⁵, Kaniguram dialect of Ormuri yäspa "mare", barytone feminine stem from which the secondary masculine stems yäsp and Logar dialect yäsp were derived¹⁹⁶).

Eastern Iranian: North-Eastern. Scythian Ασπα- "horse" (developing into Ossetic aefsaē/jaefs "mare"¹⁹⁷) in proper names like Ασπουργος < *aspa- + ugra- "strong" (the combination can be traced back to Proto-Aryan: Vedic aśvam... ugram "miraculously strong horse" about the horse of Ashvins, *Ṛg-Veda* I.118.9; Avestan aspahe aojō "the strength of a horse", Yt. 19. 68) > Ossetic aefsūrǵ/aefsoṛq "miraculous kind of horses (in mythology and folklore)"¹⁹⁸, Βορασπος < *bor- "yellow" (Ossetic bor-/bur- "yellow", also used as the first part of names of several mythological creatures; Modern Persian bor "fox"¹⁹⁹).

Sogdian 'sp²⁰⁰, Khwarezmian 'sp, the Bactrian name of a goddess Ιροασπο (< druva- "strong, mighty" + aspa- = Avestan Drvāspā, a female deity connected to the male Gəuš Urvan "Soul of the Cattle"²⁰¹, represented as a male with a horse on the

¹⁹⁴ hespē, Rudenko 1982, 78, N 56.1 a.o.; Kurdoev and Cukerman 1950, 34, lines 169, 176; 50, 21 a.o.

¹⁹⁵ For these dialectal forms, cf. Oranskij 1979, 156-157.

¹⁹⁶ Efimov 1986, 9, 80, 133.

¹⁹⁷ Abaev 1958, 563.

¹⁹⁸ Abaev 1949, 157; 1958, 112-113; Vasmer 1923, 34.

¹⁹⁹ Vasmer 1923, 36; Zgusta 1955, 56; Abaev, 1958, 271-273; Milewski 1969, 161.

²⁰⁰ Gauthiot 1914-1923, 60, 127, 157; barytone paradigm: Livshic and Xromov 1981, 375. Yagnobi asp, very often used in the crucial parts of folk tales (Andreev a.o. 1957, NN 1, 11, 12, 15,), might have been borrowed from Tadjik.

²⁰¹ Bartholomae 1979, 783; Steblin-Kamenskij 1981, 321 with references.

Bactrian coin bearing this inscription), Mundzhan yosp²⁰², Yidga yasp “horse”, aspālan “stable” (< *aspa-dāna), Pashto (Afghani) and Vanecī ās.

Vakhan-Khotanese subgroup²⁰³: Vakhan yaš, Khotanese Saka aššā- “horse”.

South-Western Iranian subgroup: Old Persian asa- in asa-bār-ibiš “riders”; Middle Persian asvār, Modern Persian suvār²⁰⁴, Tat ās.

II. Eastern Indo-European. Armenian. The general Indo-European word for horse was substituted by ji, related to the Vedic poetic term háya “steed”.²⁰⁵ Pedersen and several other scholars after him²⁰⁶ suggested that Armenian ēš “donkey” reflects the old Indo-European name for the horse; the process could be described as a chain reaction during which the widening of the sphere of usage for the poetic term (ji) led to a change of meaning in its synonym ēš. But according to another idea followed by Benveniste²⁰⁷ the latter goes back to Sumerian ANŠE “donkey”, which in turn Starostin²⁰⁸ explains as a borrowed Northern Caucasian term for horse (discussed above); the weakness of this etymology is the root element -n-, which is not well documented in Eastern North Caucasian and is absent both in Hurrian and Western North Caucasian (see above). According to Starostin the Armenian word as well as Mediterranean *Wanderwörter* like Latin *asinus* can be traced back to the Hurro-

²⁰² Griunberg 1972, 390.

²⁰³ Oranskij 1975, 185; Edel'man 1986, 41, 84-85; cf. Sokolova 1973, 3. For references to individual languages: Griunberg and Steblin-Kamenskij 1976, 507, also 43, proverb 19, and 47, riddle 13 (ablative yaš-ən); Gercenberg 1981, 247. The first part of the Khotanese ašpara- < *ašša-para- *Medicago sativa* corresponds to another dialectal variant in the Old Iranian name of the same cultural plant asp-asti (Steblin-Kamenskij 1982, 66).

²⁰⁴ Bartholomae 1979, 207, 219-220; add. 121; Oranskij 1979, 156-157, 169; on the second part of the compound, see the next section of the present article. Cf. Modern Persian astar “mule” < *asa-tara-, Steblin-Kamenskij 1982, 30.

²⁰⁵ Gamkrelidze and Ivanov 1984/1995, 463; for an areal interpretation, cf. Porzig 1954; Ivanov 1956.

²⁰⁶ Lamberterie 1978, 262-266, n.1. Werner Winter in his recent study of the word suggests that the Hurrian name for horse was borrowed from Armenian, meeting semantic difficulties: at the time of borrowing the Armenian word should have had the original Indo-European meaning which later changed.

²⁰⁷ See Ernout and Meillet 1994, 51.

²⁰⁸ Starostin 1988, 115.

Uratian source having the suffix -n- (another explanation of the Latin word as a compound *as-onos "weight-bearer connected to Asia" was suggested by Pisani²⁰⁹, who at the same time accepted the link between the Sumerian and Armenian terms; see below on the name *Asia*). Having the large number of Hurro-Uratian loanwords in Armenian in mind, Starostin's suggestion of a possible connection between Hurrian ešše "horse" and Armenian ēš "donkey, ass" seems plausible. In this example one can see how difficult it is to distinguish between Hurro-Uratian, Northern Caucasian and Indo-European, particularly in a case where phonetic development has caused a shortening of the form, with only two phonemes remaining.

III. (Southern) Anatolian. Luwian-Lycian: Hieroglyphic Luwian as/zu(wa)- "horse" is attested in different case forms in several inscriptions, including the Karatepe bilingual text.²¹⁰ The phonetic complement -u- after the logographic Sumerian ANŠE.KUR.RA "horse" in Cuneiform Luwian²¹¹ makes it possible to suppose a form comparable to the Hieroglyphic Luwian one. Cuneiform Luwian a-aš-šu- is repeated twice (KUB XXXV 102 + 103 Vs. I 7'; 107 + 108 Rs. IV 22' = Starke 1985, 221, 240, I.1.A and III.1) in a group of birth rituals where also the semi-logographic spelling ANŠE.KUR.RA-uš "horse" (KUB 107 = 108 Rs. IV 7', Starke 1985, 239) is used with a hippological epithet waššantiš²¹²; a logogram for "horse" (KUB XXXV 128 Rs. III 7') and the horse-god Pirwa also appears in the other fragments of the same group.²¹³ See

²⁰⁹ Pisani 1979, 495.

²¹⁰ Starke 1995, 118-119, n.237, with a discussion of the reading su (and not zu as suggested by Melchert 1994, 234).

²¹¹ Otten 1953a, 40; Laroche 1959, 119; Meriggi 1980, 252. On the possibility of finding the spelling with -zu- in Cuneiform Luwian as well as in Hieroglyphic Luwian, cf. Melchert 1993b, 38-39, 44. In the text K Bo XIII 260 III 24, where Melchert has suggested the form az-zu-wa-an-za as derived from az-zu-wa- "horse" in several lines, the Luwian name for a (wooden) object tu-u-ri-in is repeated, which may be derived from the Hittite root turiya- "to harness, to yoke" and may have the meaning "pole of a carriage" (see below in section 5).

²¹² Starke (1995, 43) suggests "gathered, assembled" as a meaning referring to the position of the horse. On the meaning of the Luwian word, cf. Starke ib., 118, n.236; see also below in the next section of the article, on a-aš-šu-ut-ti-.

²¹³ Starke 1985, 252-254 and 231. Comparable contexts with Pirwa and UR.MAḪ "lion" are present in KUB XXXV 145 Rs. III 13'-14' and Bo 1391 Vs. I 6 (Starke ib., 256).

below on the -tt- derivation from aššu- “horse” in Luwian. The Hieroglyphic and Cuneiform forms reflect the normal development of palatal *k̥ in Luwian not only before u²¹⁴, but in other positions as well: thus the classification of Luwian as a satəm language has been proven.²¹⁵ But it was a language in which only the first two stages of the development of the velar stops took place: the palatal stops had already become affricates and fricatives (and some of them then disappeared), and the labiovelars had already been palatalized in the position before a front vowel (see the next section for this suggestion) but not yet merged with plain velars.

Since the form of the name for horse can be explained by this internal process in Luwian itself, there is no necessity to construe the name as an Aryan borrowing.²¹⁶ The possibility of finding a corresponding Cuneiform Luwian form aššu- in the term aššu-šša-nni in a Hittite hippological treatise, reinterpreted as a Luwian word²¹⁷, is not absolutely ruled out. However, the general cultural context of Kikkuli’s treatise still makes the Hurrian element (see above on the explanation of -nni in this term as a Hurrian postposed article) more plausible than the Luwian one.

Lycian *esbe* “horses, cavalry” has been considered as a borrowing from Iranian (for instance, by Meriggi), which still seems plausible. But recently it has been reinterpreted as a continuation of a Proto-Luwian form reconstructed as *ašš/zwa-²¹⁸ or of Proto-Anatolian *ekwo-²¹⁹. Aside from the use of the word in Lycian inscriptions as a military term (Instrumental *esbedi*, TL 44a, 36) or in connection with the “sacrifice

²¹⁴ Melchert 1994 with references. See earlier discussions: Meriggi 1980, 265, §265; Gamkrelidze and Ivanov 1985, 87.

²¹⁵ On the language of the Hieroglyphic texts, see Bonfante and Gelb 1944. For examples of the change *k̥ > s/z, see Morpurgo Davies and Hawkins 1986; Melchert 1994 with further references.

²¹⁶ Szemerényi 1976.

²¹⁷ With a possessive suffix -šša- and a Luwian suffix -nni according to Starke (1990, 221, 502; 1995, 117-118); Melchert takes the opposite view (1994, 234).

²¹⁸ Starke 1990, 69, n.151, 502, n.1852; 1995, 121, n.246.

²¹⁹ Melchert 1994, 288, 295, 302, cf. also 326 on the reconstruction of barytone /*éšwe*-/.

of a horse" (TL 128, 1: axā/uti esbe[h]i = ašvamedha)²²⁰, it occurs (in the Genitive/Adjective esbehi > esehi "[the coin] of the Horse") on Lycian coins with the representation of a winged horse.²²¹ It is also supposed that a similar stem with a root vowel a < e in two different variants is represented in the second half of the name of a god-rider in Lycian (or Southern Anatolian in general?)²²², but for a long time it was thought to be Thracian²²³: Κακ-ασβος/Κακ-αθιβος (with variation suggesting an unusual sound shape of the word); the same second part with another first stem in Τρικασβος.²²⁴

Pisidian, of which the evidence for connections (along with Sidetic and Carian) to late Luwian-Lycian is becoming stronger²²⁵, might have had a similar stem with another initial root vowel e or i (due to a change *e > i known in Hittite for instance, but for another possible explanation see below): cf. a Pisidian toponym Εσουα-κουη²²⁶ and a composite name Μασσαν-ισβας²²⁷ < *masana- ("god" in Luwian-Lycian with a stem in -n²²⁸) + *isba-²²⁹. A similar second element is supposed in the

²²⁰ Hajnal 1995, 116, n.124; 232, n. 295. Melchert (1993a, 8) suggests the reading axāti. On the parallels to the horse sacrifice in other Indo-European traditions, see Ivanov 1974; Puhvel 1987, 261; 269-276. If the Lycian noun axāti can be traced back to *e/oHem-dh-i, it can perhaps be compared to Old Indian medha < *(H)m(y)a(f)dh- (with Avestan and possibly Old Irish and Gaulish parallels according to Puhvel), although the root structure is transformed in one of these Indo-European dialects. The Lycian variant axu-ti- seems similar to Lithuanian au-ka, but the latter is thought to be an innovation.

²²¹ Carruba 1993, 16-17.

²²² Heubeck 1961, 87; Gindin 1967, 145-146; Neumann 1979, 265-6; 1994, 184-185. On the phonetic peculiarities of variants pointing to a borrowing into Lycian, see Hajnal 1995, 20 and 36, n.29; the general label "from Asia Minor" (*kleinasiatisch*) is used; cf. below on another Lycian centum variant that seems to have been borrowed from Northern Anatolian.

²²³ Pisani 1959, 101, 128. There were several possible explanations for the first part of the compound: either "bad, evil" (Greek κακός, Phrygian κακουv if not a Greek borrowing, Albanian keq) suggesting the name "evil rider" or "mighty" (Heubeck 1969); the translation "horseback" (Slavic skok-, Runic "Proto-Norse" hahai in only one inscription) was also suggested with a general meaning similar to the epithets of the Thracian figure Heros discussed below.

²²⁴ Neumann 1979, 266; 1994, 185 (with the tentative meaning "the one with a wild (?) horse").

²²⁵ Neumann 1994, 227ff.; Melchert 1994, 44-45; Starke 1990; Hajnal 1995 a.o.

²²⁶ Starke 1995, 119 ("Pferde-Dorf").

²²⁷ Zgusta 1964, 302, §878; 555, section 189.

²²⁸ Melchert, ib., 309, 320-327. A Semitic origin of the stem seems evident.

²²⁹ Reconstructed as [isswa-] and compared to the Hieroglyphic Luwian and Lycian noun for horse by Heubeck 1961, 84ff.; Gindin 1967, 144-146; 1993, 18.

Pisidian secondary formation Αβ-ισβ-ιανος²³⁰ and the Anatolian names Δορυ-ισπας/Δορυ-ισβας²³¹. Pamphylian Μαγασ-ι[ssw]ας with a rare sign for a special phoneme interpreted as [ss] < *t̥ < *ky before digamma seems less clear.²³² Heubeck interprets this word as a compound containing the same second element in its original form *isswa-, somewhat different from the widely spread Iranian type. The form Παρισπας, which is sometimes mistaken for a name of Iranian origin²³³, shows the main difficulty in appraising all these Anatolian forms, including the Lycian forms cited above. All of them seem so similar to the most widely spread Iranian form of the name for horse that the possibility of borrowing is not excluded. However, the unusual vowel in the Pisidian forms as well as the form with a digamma still makes their native origin more probable.²³⁴

Another recently discovered late Southern Anatolian language of the Luwian group, Sidetic, probably has the stem -a/esb- "horse" in proper names like Josbija < *Yu(w)-a/esb-ija.²³⁵

Among all the compounds in *-isswa- > -ισβ- studied by Heubeck and his followers, 'Αρ(ισβη seems particularly interesting, which was known both as the name of a town in the Homeric Troad ('Αρ(ισβηθεν "from Arisbe" B 838 a.o.) and as anthroponym of two important female persons in the Trojan mythological story. As more facts point to the role of the Luwian-Lycian strata in Troy (Luwian Wiluša) the significance of each name possibly belonging to it should not be underestimated.

²³⁰ Zgusta 1964, 45-46, §9. Cf. Sidetic ab- (Hajnal 1995, 202).

²³¹ Zgusta, ib., 152-153, §300-4, 5; the first element is known in inscriptions thought to be Phrygian, cf. Hajnal 1995, 32, n.12 on names with the first element Δορυ-.

²³² Zgusta, ib., 277, §840-2, n.12 with references; also Heubeck 1962, 84; Shevoroshkin 1965, 91, n.3. For the new phonemic interpretation according to Brixhe, see Brixhe 1976, 7ff. and Hajnal 1995, 23 and 19 (on the first element of this compound Μαγας = Lycian Maxah, cf. other parallels; Kammerzell 1993, 60, Ex.93).

²³³ Zgusta, ib., 418, §1206.

²³⁴ Cf. Gindin 1967, 145.

²³⁵ Starke 1995, 119-120, n.241 (with references).

The etymology of the old name for the area of the northwestern part of Asia Minor with a Luwian-Lycian population, called in the Hittite texts Aššuwat²³⁶ and in Mycenaean Greek a-si-wi-jo-, may be important for the question being discussed. Although the name of Asia was well known to Mycenaean Greeks, it would have been of Anatolian ("Asianic" in somewhat antiquated terms) origin.²³⁷ The idea of deriving it from the Hittite adjective aššu- "good"²³⁸ does not seem particularly successful, since in Luwian the corresponding word has the form waššu-, and the name would have originated in a Luwian environment. For this reason alone it is tempting to derive it from the name for horse, which was so important for the historical and military context of the whole Trojan narrative (the story of the wooden horse may be a characteristic example; another is the folk motif of a prophesying horse, etc.). It seems remarkable that in the *Iliad* a hero called "Asian" comes with his *horses* from the town of *Arisbe*, since in such a formula the same ancient name for horse might reappear several times in different variants.

IV. Thracian. Among those Paleobalkanico Indo-European languages that are supposed to belong to the satem group, Thracian might have retained an old term for *horse*, possibly seen in the proper names Εζβενις/Hezbenus/Esbenuš/Εσβενοιος (having the characteristic -n- suffix; see above on the type of Latin asinus and a possible Hurrian parallel) with a (partial) voicing of the intervocalic consonants preserved as voiceless in the second part of the compounds Βετ-εσπιος, Ουετ-εσπιος, Ουτ-ασπιος. Since in the inscriptions of the Varna region these compounds function as epithets of the Thracian god-rider Heros, all of them can be understood as equivalent to Επιπιος = εφ-ιπιιος "riding the horse"; the first element of the

²³⁶ Goetze 1974, 180; Gindin 1993, 130 with bibliography.

²³⁷ Watkins 1995, 151, 290.

²³⁸ Heubeck 1961, 72-73, n.76.

compound, etymologically connected to Old Indian *ud-*, was deciphered on the basis of Cypriote $\upsilon\tau\upsilon\chi\alpha = \epsilon\pi\iota\ \tau\acute{\upsilon}\chi\eta$.²³⁹

Again there remains the possibility of an ancient Iranian borrowing. To this one may add that, since the form of the Thracian stem is closely related not only to Iranian but also to some Anatolian words cited above, and the Thracian language is known mainly through disparate names given by classical authors, it is not possible to state definitely that these terms continued the original Indo-European tradition directly and not through borrowing from neighboring dialects. In any case the words given above may contain a possible trace of the Indo-European word for horse in one of the Paleobalkan languages considered to be a source of Modern Albanian. The latter lost this word.²⁴⁰

V. Northwestern Indo-European. Baltic and Slavic. Old Lithuanian has preserved the feminine derivative of the Indo-European word in a phonemic form *ašvā* "horse", practically identical to the Vedic (the masculine counterpart was lost in Baltic). The only difference consists of the shift of accent towards the final syllable which had acquired the acute tone on the vowel becoming long after the loss of a final laryngeal (the mark of the feminine common to Indo-Iranian and Baltic; see below on the correspondences in other dialects): **ékwe/o-H* > **ékwaH* > **ékwā* > *ešvá* > *ašvá*. The initial vowel *e* was attested in Old Lithuanian *eschwū* = [*ešvu*] in the speech of *Bretkūnas* who often changed old *a* > *e*²⁴¹, thus it is not clear whether here one may definitely speak about an archaism (as it is usually described in the handbooks), but cf. also the Lithuanian river names *Ešvinė* : *Ašvinė*. Recently it has been suggested that the word in the dialectal form *osa* < **asa* "mare" < **asva* was preserved in Old Latvian

²³⁹ Detshev 1952, 80, n.2; Gindin 1993, 18; Poghirc 1983, 65 (5.2.2), 66; 81. On the type of compounds like Greek *ἑπῖππος*, see Milewski 1969, 117, II 7. For the suffix, cf. Old Indian *aśviya-*.

²⁴⁰ Aside from some later borrowings discussed below, in Albanian there is the word *mës* for a male foal of an ass or a horse (corresponding to Illyric Messapic *Menzana*), which can be connected either to an Indo-European term for "male" or to a verbal stem "to suck": Porzig 1954; Pisani 1959, 127; Gamkrelidze and Ivanov 1984/1995 I, 474-475.

²⁴¹ Büga 1961, III, 300-301.

(in the XVII c.).²⁴² The common Baltic character of the older vowel change *e > a²⁴³ is seen in Western Baltic: Old Prussian *aswinan* "the milk of a mare" with an -n- suffix as in Lithuanian dialectal *ašvėnis* "work horse"²⁴⁴). Būga supposed that the vowel a (instead of *e) in the Baltic word for horse was caused by Iranian influence. This idea seems interesting if one takes into consideration the importance of a (Northwestern and -eastern) Iranian term for many other languages into which it was borrowed. Later in Eastern Baltic the old term for horse survived only in Žemaitic and some other Lithuanian dialects. The word disappeared in prehistoric Slavic.²⁴⁵ Its use in hydronyms like Lithuanian *Ašvā*, Latvian *Asva*, Prussian *Asswene*, cf. Slavic *Osva*, can be traced back to the Eastern Indo-European metaphor describing rivers as horses, well documented in the ancient Indo-Iranian languages.²⁴⁶

From these data on the name for horse in the *satəm* dialects it follows that the immediate source of the Hurrian form (if no serious changes are supposed in its prehistory) can be seen only in the consonant structure of the Southwestern Iranian form (which is—probably a marginal Southern form opposed to Central Northwestern and Eastern Iranian innovations—also phonetically similar to the Vakhano-Khotanese dialectal shape, but the latter is found at such a distance from the

²⁴² Karulis 1992, I, 468-469; II, 564.

²⁴³ Andersen 1996, 54, 148.

²⁴⁴ Toporov 1975, 136; Mažiulis 1988, 106. It is supposed that the -n- suffix in Old Indian *aśv-in-* and some other Indo-European forms may be related to the Old Prussian word (Eckert 1995, 55). But the parallel in Latin *equinus* (cf. Umbrian *ekvine* borrowed from it or cognate to it) now seems excluded if, according to Nussbaum and Vine, the latter contains a secondary denominative suffix *-no- added to the original Genitive Singular form *equi*. See Vine, "Latin -ināre/-ināri", §5. (this volume).

²⁴⁵ It was ousted by such synonyms as **komon-* (on the meaning, see Odincov 1980, 25-32; probably cognate also to Prussian *camnet* "horse" is **kumel-*, cf. Toporov 1975, 268-270; 1984, 191-196; Eckert 1995, 57; Lithuanian *kumėlė* "mare", Latvian *kumelē*), from Eastern Asiatic words like Tibeto-Burman *Kukuchin* (Jinghpaw) *kumraŋ* "horse" < Tibeto-Burman **ku(m)ɾ(t)ɿŋ* (reconstruction after Matisoff, Proto-Lolo-Burmese **myanʔ*, Burling 1967, 84; cf. Peiros and Starostin 1996, fasc.1, 35-36; see above on the root in Eastern Asian languages of different families) borrowed through some intermediary Eurasian language (of some of the nomadic horse-riding tribes). A related name for horse with another initial became widespread in Eurasia and entered Germanic and Celtic (Gamkrelidze and Ivanov 1984/1995, I, 471, 832 with references).

²⁴⁶ Porzig 1954; Vanagas 1981, 50.

Near East that any idea of a historical link would seem far-fetched). The vowel in the Hurrian word, if it is a dialectal (Iranian) borrowing, still seems to go back to the time before the change *e > a. If this suggestion is accepted, it may lead to a study of those groups of speakers of Southwestern Iranian dialects which might have been instrumental in introducing horse-training among the Hurrians possibly in the first half of the III mil. B.C. (before which oxen were used as the main transport force as well as in a military context, as reflected in the description of a battle in the epic of Kumarbi and in other mythological Hurrian texts). Striking correspondences between the devices of horse-training as seen in Kikkuli's treatise and in the *Avesta*²⁴⁷ might be of some interest from this point of view, although the Avestan language belongs to a different Iranian dialectal group. In this light a possible Iranian origin for Hurrian *tarr-* "fire" (discussed above in part 2) looks particularly intriguing.

If, however, one supposes that the Hurrian word might have undergone such changes as the loss of the labial glide, then it (and some other dialectal Northern Caucasian forms) can be derived from the forms suggested for Mesopotamian Aryan or Luwian, which would correspond to their homeland being located somewhere close to the oldest Hurrian kingdoms. A *satəm* dialect of Proto-Indo-European that might have been a precursor both of Proto-Aryan and Proto-Luwian might have been a source of (dialectal) Northern Caucasian terms. The Kartvelian form **acua*, in which a borrowing either from Northern Caucasian²⁴⁸ or from Iranian²⁴⁹ or some other Indo-European²⁵⁰ source has been supposed, can be traced back to the same archaic dialect where the old palatals were reflected as affricates and the labial glide was preserved after such an affricate in the name for "horse" (the vowel *a* can be accounted for both by the rules of later Aryan and Luwian phonology).

²⁴⁷ Hauschild 1959. From the same point of view descriptions of horse races in Hittite rituals at the time of the Hurrian dominance in the Neo-Hittite Empire might be interesting: Haas 1994, 792.

²⁴⁸ Nikolayev and Starostin 1994, 520-521.

²⁴⁹ Klimov 1994.

²⁵⁰ Gamkrelidze and Ivanov 1984/1995, 479, 813.

As for the possibility of a later borrowing in the reverse direction from a Northeastern Caucasian language into an Indo-European *satəm* dialect, the only probable candidates for this might be the Anatolian forms like the Pisidian one with the vowel *i* in the stem.

It seems that Būga was the first linguist to suggest, as early as 1923 in his review of Schrader's *Reallexikon*, that the name for horse helps to establish the absolute chronology of the *satəm* dialects²⁵¹ (at that time he could fix the *terminus ante quem* in the Aryan dialects attested in Asia Minor by the middle of the II mil. B.C.). Unfortunately, his remarks, published only in Lithuanian, did not find any immediate continuation. But we may say now that the chronology of the domestication of horses (starting with the IV mil. B.C.), of the spread of early Indo-European dialects (the same date according to glottochronology), of the restructuring of consonants in their *satəm* branch, and of their contacts with Hurrian and other Northern Caucasian dialects and Kartvelian (see also below on Semitic), makes it possible to search for the important synchronic intersection of these events at the cusp of the IV and III mil.B.C.

1b. centum dialects:

VI. (Northern) Anatolian. Hittite. The logographic (Sumerian) rendering of the word *horse* hides its phonetic shape, but the phonetic complements *-uš* in Nominative Sg. (K Bo XVII 15 Rs. '9'; Neu 1980, 73; K Bo III 34 II 36) and *-un* in Accusative Sg. (K Bo VIII 36 Vs. 4') make possible the stem in *-u-*²⁵², which is formally similar to Cuneiform Luwian (K Bo VIII 36 I 4)²⁵³, although the consonants before that phoneme should have been different in the two languages. *Ak/gu(w)a*, which appears both as a toponym and the anthroponym of two male persons²⁵⁴ in Old Assyrian documents (in a kind of

²⁵¹ Būga 1961, III, 680-681.

²⁵² Starke 1995, 120, n.240; cf. Friedrich 1957, 25.

²⁵³ Meriggi 1980, 252, §6.

²⁵⁴ Laroche 1966, 25, N 19; 268. Balkan considered the name native while Garelli thought *Agu-(a/za)* was Assyrian; Larsen 1976, 358, n.14 with references; cf. Larsen 1967, 52, 54 (different texts mentioning *Agu*); Matouš and Matoušová-Rajmová 1984, 161, 51b; 73, 109 (a cuneiform inscription mentioning *Agu*, *a* in combination with a semi-hieroglyphic symbolic scene in a native style); on *Aku-za*: Shilejko

archaic cuneiform writing that does not distinguish ancient voiced/voiceless), theoretically might have been a Hittite centum correspondence to the Luwian words cited above (although the first vowel seems more like that in a Luwian form), but the ethnic identity of these personal names is not clear and the toponym may be a variant of Amkuwa (a city name in Old Assyrian tablets)/Hittite A(n)kuwa.²⁵⁵ The probable Hittite form of the name for horse might have been e[k]ku(wa)-/I[k]ku(wa)-.²⁵⁶ The 'Lycian' proper name Icuwe²⁵⁷ (if not originally from the Lycian language but borrowed from a Northern Anatolian centum dialect) may have some similarity (by chance?) to the reconstructed Hittite form. The meaning of the latter Lycian word is not known, but the sense "horse" is almost certain for the second half of the "centum" name of the Anatolian god-rider known through a Lycian (borrowed) form xaxakba (< *kak-akwa), which is equivalent to the satəm (Lycian/Southern Anatolian and/or Thracian) variant κακασβος/κακαθιβος discussed above. If in Anatolian there are really two variants for the name of this god-rider²⁵⁸ differentiated by the centum/satəm isogloss, it might be particularly interesting for the history of the horse-name in these Indo-European dialects. But the root vowel a of the Lycian name is influenced by the normal Luwian form seen in another variant.

VII. Tocharian. On the basis of Tocharian B (Kuchean) yakwe, A yuk "horse" it is possible to reconstruct Proto-Tocharian *yékwos < *ékws, with a secondary development of the initial *y- similar to the beginning of the word in Eastern Iranian

1921, 359; Jankovskaja 1968, 181 (Aku-za and Aku-tum), 183, 186, 193; in a text analyzed by Shilejko and Jankovskaja (ib., 193) the sister of the sons of Akuza has a name or a title related to the local cult of Kubaba.

²⁵⁵ Ünal 1984; Cornil 1990, 11-12.

²⁵⁶ The same suggestion is found in Starke 1995, 120. For a possible double spelling of *k- in the enclitic combinations see ták-ku, ne/i-ik-ku (Oettinger 1979, 209, n.64; 538 with references); the situation with nouns and verbs may be complicated due to the influence of other factors such as the place of the accent/tone. The earlier etymologies trying to find a satəm trace before a labial glide in Hittite were wrong; Melchert 1994, 119 with references.

²⁵⁷ Zgusta 1964, 194, §461.

²⁵⁸ A suggestion made by Hajnal 1995, 36, n.29. A similar centum variant for the name of the "earth" is found in Hieroglyphic Luwian takam- as opposed to the Cuneiform Luwian tiyam-.

Ossetic (but absent in Scythian), Mundzhan, Yidga, Vakhan and North Western Iranian Ormuri (where in other cases it alternates with *h-* and *w-*²⁵⁹, and thus may be compared to the same initial prothetic *h-* in the name for horse in North Western Iranian Kurd, Beludzhi and Dardic Kalasha and to *w-* in Nuristani Kati). One may think that the appearance of the new phoneme **y-* (*/w-/h-*) in initial position was an areal process common to Tocharian and some Iranian dialects of the same Central (Eur)Asiatic linguistic zone; if there was an initial laryngeal (see above) it had been lost before that process started. The unstressed final syllable lost the last consonant of the ending and was reduced in Tocharian B and dropped in A. The old palatal stop + **w* developed into the group **kw* (coinciding with old labiovelars) which was preserved in B but developed into *-uk* in Tocharian A after the loss of the final vowel²⁶⁰; **yekwos* > **yākwā* (with the characteristic palatal quality of the whole word typical of Tocharian) > **yākw* > *yuk*. The possibility of expressing the old combination *k + w* both by *kw* (in Tocharian B) and by *uk* (Tocharian A *yuk* sometimes written in Brahmi with a subscript _u: *y_uk*) may hint at a tendency towards its monophonemic interpretation. The combination of the palatal stop + *w* constitutes the main problem in the phonological history of the word.²⁶¹ In the earliest period of the history of the centum dialects three different types of segments may theoretically be opposed to one another:

**k̥ + *w*

**k + *w*

**kw*

Although in centum dialects in principle **k̥* and **k* merge, in this particular position before **w* they may preserve some traces of the former opposition.²⁶² Tocharian

²⁵⁹ Efimov 1986, 91-92.

²⁶⁰ Lane 1960; Van Windekens 1970, 114, 116-117, 120-121; 1976, 56; Ringe 1996.

²⁶¹ See Ivanov 1958 with references.

²⁶² Ivanov, *ib.*

(where, unlike the ancient centum dialects, labiovelars and velars started to merge as in satəm languages) does not show this difference.

No trace of a feminine stem in *-ā formed from this word is found in Tocharian. Among the archaic formations derived from the name for horse one may single out the Tocharian B adjective *yākwēfīte* "relating to a horse", cognate to those archaic *-n-formations that are represented in most ancient languages²⁶³: Old Indian *Aśvin-* (name of divine twins also represented as two horses), Old Prussian *aswinan*, Lithuanian *ašvīenis*, river name *Ašvīenė* (see above on this type of suffix). Morphological and semantic isoglosses show that after the separation of Proto-Anatolian-Hittite and Proto-Anatolian-Luwian-Lycian the remaining Indo-European dialects were still developing together before the centum-satəm division was created. This means that to the speakers of these dialects the difference between a palatal stop and a corresponding velar sound did not yet prevent the identification of stems which included these phonemes.

VIII. (North) Western Indo-European ("Old European"). Germanic: Runic "Proto-Norse" *ehwu* = Dative **ehw-ē* "to the Horse" (in inscriptions on the magical amulets often bearing horse images as well)²⁶⁴; Old Icelandic *jör* "horse", Gothic compound *aihva-tundi* "bramble, prickly bush"²⁶⁵, Old English *eoh* "horse; name of a rune" (the latter meaning corresponds to Old Danish *eor*, Gothic *eyz*²⁶⁶) < **éhwez* (old barytone type²⁶⁷), Old Saxon compound *ehu-scalc* "horse-servant". The feminine stem in *-ā* is not attested.

²⁶³ Van Windekens 1975, 64. See above on a comparison to the Hurrian article and on the Baltic stem in *-n-* and its cognates.

²⁶⁴ With a mixture of the runes *e* and *w*: Krause 1993, 58, §38; for an older interpretation, see Marstrand 1929, 74-77 (this view is not widely accepted).

²⁶⁵ Use in the names of plants similar to Greek: Lehmann 1986, 15, A 67; Chantraine 1990, 467.

²⁶⁶ On different attempts to understand this distorted name (for horse?), see Lehmann, *ib.*, 100, E5.

²⁶⁷ Lubotsky 1988, 93, 162.

Gothic Θ = [hw] is one letter which is considered to render one phoneme. It seems that all three types of segments enumerated above (* $\acute{k}w$, * k^w , * k^w) developed into a single labialized fricative phoneme designated by this letter. Labiovelars in general are unstable²⁶⁸, thus after becoming a labiovelar the segment usually develops into a non-labialized phoneme or a labial losing one of its integral parts. Because of this, from a structural point of view, the shape of the horse name in centum dialects was transformed to a much greater extent than in the satəm ones. The latter seem to be innovative on a superficial phonetic level in changing old palatals, but they kept the general phonemic scheme of the word without significant changes.

IX. Western Indo-European ("Old European"). Italic and Celtic. Latin *equus* < *equos* "horse" (masculine) corresponds to a derivative *equa* "mare" (feminine) which becomes a counterpart of masculine *caballus* in late Latin and survives in Romance: Spanish *yegua*, Portuguese *égoa*, Catalan *egua*, Provençal *ega*, Old French *ive*, Sardinian *ebba*, Rumanian *iapă* (cf. the survival of the "marked" feminine form also in Lithuanian, Ormuri and some other Iranian dialects). The feminine stem in long -ā (originally a final laryngeal added to a thematic masculine stem) is equivalent to the one found in Indo-Iranian and Baltic and can be traced back to the late Proto-Indo-European dialectal period of the formation of the three-gender system after Anatolian (Hittite and Luwian-Lycian) had separated from Indo-European (or "Indo-Hittite"). Some rites, the name of which includes Latin *equus* like October *Equus*, also go back to the period of the dialectal connections of Italic and Indo-Iranian.²⁶⁹ Latin *q* [k^w] was a single phoneme into which, in intervocalic position²⁷⁰, merged the three segments described above. It may be supposed that the development * $\acute{k}w$ > * k^w > * k^w was a common phonemic process at least in some Western Indo-European ("Old European") dialects such as Proto-Germanic (where later * k^w > *h*^w) and Italic.

²⁶⁸ See Polivanov 1968, 64, 120-125, 327-328 (on the name for horse: 123, 331); 1928, 163-164.

²⁶⁹ Dumézil 1966.

²⁷⁰ On initial position, cf. Ivanov 1958.

The Venetic language has a name for horse which closely resembles the proto-Italic form: Accusative Singular *ekvon*/Latin *equum* < **equom*.²⁷¹

The monophonemic treatment typical of the Western Indo-European development of **kw* is particularly clear in Celtic: Gaulish archaic (in the name of a month) *equos* (Nominative = the early Latin form), *equi* (Genitive), Later Gaulish *epo-* "horse" (in proper names), *Epona* (the name of a goddess), proper name *Epot-so-ro-vidus*; Breton *ebeul*, Old Cornish *ebol*; archaic Goidelic-Old Irish (in Ogam inscriptions) *ECCEGNI* (cf. the later mythological name *Echen*), diminutive of **eqas* "horse" > *ech*; *EQQODI*, *EQQOD* "usually dealing with horses"²⁷²; Old Irish *ech* (with the normal disappearance of the labial feature²⁷³ **w* typologically similar to delabialization in Latin *ecus* < *equos*).

The magical role of the horse is particularly clear in this area as well as in Roman tradition and in Germanic. Here the common features of these Western dialects and of Indo-Iranian may be seen as marginal archaisms preserved in the extremities (Western and Eastern) of the Indo-European world. Thus the Mesopotamian Aryan, Vedic and Avestan proper names and expressions continuing the combination of a term for a horse with the stem **pri-* (see 1. I A above) correspond to a composite proper name in which its synonym combines with the same stem: Old English *Frid-hengest*.²⁷⁴

2. X. Eastern Indo-European. Greek.

Mycenaean Greek *i-qo* (with the variant *i-po-* in the compound *i-po-qo-qo* = later Greek *ἵππο-φορβός* "horse-breeder"²⁷⁵) and later alphabetically written *ἵππος* with a dialectal variant *ἵκκος* and a corresponding proper name **ἵκκος* (showing later

²⁷¹ Pisani 1959, 166, n.2 with references.

²⁷² Pokorny 1948-1949, 57; Korolev 1984, 153.

²⁷³ Thurneysen 1946, 124, §203d.

²⁷⁴ Gamkrelidze and Ivanov 1984/1995, 472, with references.

²⁷⁵ Explained by regressive dissimilation: **kw...g*: Lejeune 1972, 47, n. §33-3; Panagl 1985, 286; cf. Mycenaean *poqewija* = *φορβεῖα* "halter" and possibly *poqa* = *φορβή* "forage, fodder", Chantraine 1990, 1187-1188.

delabialization) make it possible to reconstruct *hik^wk^wo- "horse", which has three phonetic features different from the rest of Indo-European and defies the normal laws of Greek development²⁷⁶: 1) initial *h- (absent in the dialectal variant and in some composite proper names with this second element²⁷⁷ which sets some scholars thinking about the relatively late—probably post-Mycenean?—age of this initial); 2) vowel i in the root; 3) gemination of intervocalic labiovelars (or simple velars in the dialectal variant). These abnormal features make it clear that the word does not belong to the ordinary vocabulary. There are several possible explanations:

α) One can suppose that the Greek word continues an unusual Indo-European prototype only distantly related to the general Indo-European name. To account for the Greek form within the parameters of the phonemic rules, it is necessary to suggest an *s- mobile followed by a *schwa indogermanicum secundum* (Güntert's *e); one can then suggest the expressive gemination of *k^w like that found in the Homeric Dual ὀσσε "two eyes" and Present ὀσσομαι²⁷⁸ "to see, to forbode, give to foresee" (from the Indo-European root *(s)ok^w- "eye", "to see", but some irregular forms have led to the assumption of a phoneme like *k^{*} at the end of this root²⁷⁹). In that case, an Indo-European protoform *s_ek^wk^wo- "horse"²⁸⁰ is reconstructed which can be considered related to ekwo- > ek^wo- in its dialectal Western Indo-European centum form discussed above. Yet such a form does not fit the usual reconstruction: the s- mobile is

²⁷⁶ Lejeune 1972, 83, n.1; 190, n.2; 280, n.1. Cf. Chantraine 1973, 334; 1979, 2; Panagl 1985, 283; see the discussion in Adams, Mallory, and Miller 1997, 274. It seems possible to suggest a correlation between these linguistic data and the unexpectedly late time of the appearance of the horse in continental Greece (on the latter, see the remark by Mallory 1997a, 68-69, where the possibility of the relatively late arrival of the Indo-European Greeks to Greece, as suggested by Gamkrelidze and Ivanov 1984/1995 I as well as by Carruba, is not taken into account).

²⁷⁷ As B. Vine has pointed out to me, the h- is absent in initial position as well in ἱππομένεος in an inscription from Asia Minor which otherwise does not drop h-. See Blümel 1993, 32.

²⁷⁸ Lejeune, ib., 46.

²⁷⁹ Chantraine 1990, 813. The important difference from the name for horse consists in the following *-y- which may explain the development of *ok^w-.

²⁸⁰ Cf. a similar protoform reconstructed by Goetze in an attempt to reconcile forms of different families: Goetze 1962, 35; Gamkrelidze and Ivanov 1984/1995, 478, n.21. The first to propose an old form *sesqw- > sēqw- was Marr 1922; 1933, 142-143, but as usual his brilliant idea is lost among a number of absolutely fantastic suggestions.

not confirmed by cognate forms in the other Indo-European dialects (but see below on Semitic) and is invented *ad hoc*; *schwa indogermanicum secundum* even if accepted does not usually follow this type of initial *s*-²⁸¹, and the reasons for the gemination of the labiovelar stop remain unknown²⁸²

β) Another hypothesis also based on the reconstruction of the initial **s- > h-* might suggest a link of the Greek **hik^wk^wo-* < **sik^wo* to the Semitic name for horse: Akkadian *SISŪ* (possibly from **sisā'um*, cf. the spelling ANŠE.ZI.ZI = **[ANŠE Sfsf]* in Southern Mesopotamian texts at the end of the III mil. B.C.²⁸³), Aramaic *sūsyā*, Ugaritic *śśw/ssw* (*sswm*, feminine Dual *śśtm*, also in personal names), Hebrew *sūs*. The Semitic noun together with Egyptian *śsm.t*²⁸⁴ has often been thought to be borrowed from Indo-European with a possible later reduplication.²⁸⁵ But if the Semitic word is connected to the Indo-European one, virtually the Proto-Greek stem with the initial **s-* alone seems to present a valid parallel. In the prehistoric Semitic-Greek contacts it was usually Greek that borrowed.²⁸⁶ If the direction of borrowing in this case was the same the Semitic word itself should have been borrowed earlier from some other language where the intervocalic group was closer to the Greek type.²⁸⁷

²⁸¹ Another suggestion to account for the Greek *ι* in this word was recently made by Ruijgh (1995) who, starting with the reconstruction *H₁k^wo- > k^wo- > ik^wo-*, sees in the *ι-* of Mycenaean *iqo- a voyelle d'appui*.

²⁸² Preservation of length supposed for Greek does not seem to apply here according to strict rules.

²⁸³ Civil 1966; Gamkrelidze and Ivanov 1984/1995, I, 478.

²⁸⁴ References to horses begin to appear only with the XVIII dynasty; on the ritual context: for which see Struve 1925. The military use of horses and chariots drawn by them found by that time is ascribed to the influence of Hittite and Hurrian technology. In a fairy tale about the taking of the town of Yoppa, which has structural similarities to the story of the horse of Troy ("is it just a stratagem to bring his people in this wise into the city along with the horses?", Erman 1922/1966, 168, n.1; Goedike 1968; Livshic 1979, 84-86, 241-246), the feeding of horses seems to have a functional role in the narrative, where *mrjn* "Syrian warriors" equivalent to Hurrian *mariya-nni* (of Aryan origin, Laroche 1980, 168) are mentioned.

²⁸⁵ Bibliography by Ellenbogen 1962, 123; Gordon 1967, 450-451 (item 1780).

²⁸⁶ Masson 1967; Szemerényi 1974 (with references).

²⁸⁷ See Gamkrelidze and Ivanov 1984/1995, 482, on the possible traces of a very old migratory term in Egyptian *sk* "foal of ass", Coptic *sēg* "foal of an ass, horse" (Černý 1976, 175) comparable to Old Turk *ešk/g/j/* *Ölk* "donkey", Classical Mongolian *eljigen* "donkey" (going back to an Altaic dialectal word at the Proto-Turc-Mongol chronological level); cf. also below on the Northeastern Caucasian Proto-Tsez-

γ) From a purely phonetic point of view the best solution might be to suppose a borrowing into Proto-Greek of this dialectal Northern Caucasian form of the type Proto-Tsez-Khvashi *šigwə “mare” (> Tzezi šigwə “mare” > Ginukh šegwə²⁸⁸). The initial fricative in Greek before becoming h- might have had variants *š-/ʃs- < *s-. The only difference in Greek would be the voicelessness and gemination of the intervocalic labiovelar stop. There are two main difficulties with this comparison. First, in a number of dialects it is the name for donkey²⁸⁹, and it is not a general term for horse (with the exception of a compound with a collective meaning “horses” into which it enters as the first element). Second, there is no known historical reason to compare just this Northeastern Caucasian dialect to Proto-Greek. Among other Northern Caucasian languages in which the word had forms comparable to the Greek, Western Caucasian Ubykh could be a more understandable source of borrowing from the point of view of historical geography: if the hypothesis about the early spread of Proto-Greeks in the Southern Transcaucasian area is accepted, the southern group of Western Caucasian dialects might have been in the vicinity of the early Greeks before their migration to eastern Asia Minor. But Ubykh forms (cəgwə, čəgwə) are less similar to Greek, particularly insofar as the initial consonant is concerned (for the same reason as well as because of chronological inconsistency the early reconstructed protoforms of the word could not be compared to Greek). A possible objection to the suggestion of such a borrowing might refer to the lack of sufficient documentary data on any Northern Caucasian language besides Hurrian²⁹⁰ (and Hattic, where the name

Khvashi *šigwə “mare” > Tzezi *šigwə, in other dialects the name for donkey, Nikolayev and Starostin 1994, 444-445. The main problem here is one of historical semantics: it seems that in many languages the horse was later called by a name initially referring to another equid that, before the domestication of horses, had been more important from the economic point of view (as donkeys were at the time of the Old Assyrian colonies still in Asia Minor).

²⁸⁸ Nikolayev and Starostin 1994, 444-445. Cf. Trubetzkoy 1930, etymology 51; Starostin 1987, 458.

²⁸⁹ So it may be a Northern Caucasian representative of a migratory term for “ass, donkey” found in Egyptian and Altaic, discussed above.

²⁹⁰ For a probable Greek loanword from Hurrian, see below on the name of Artemis. On Hurrian ashi “skin, hide” (with a possible link to Northwestern Caucasian *wārcwə “skin”, cf. also Diakonoff and Starostin 1986, 47; 1988, 185; Nikolayev and Starostin 1994, 228-229 on a very complicated semantic

for horse is unknown) that could have been in contact with Greek at that time. Still, such contacts are supposed on the basis of several Greek words considered to be borrowed from some Northern Caucasian languages²⁹¹; on possible cultural reasons for borrowing see below in connection with the name of Artemis.

δ) Another Northern Caucasian word for horse—*h₁(n)čw₁—, discussed above—might have been borrowed from Northern Caucasian into Greek either directly (from a dialect perhaps different from Hurrian, since the Hurrian noun is less closely related to the Greek than many other Northern Caucasian forms) or indirectly through one of the Anatolian dialects. In Northern Caucasian a laryngeal phoneme is reconstructed in initial position which may account for the Greek h-. The vowel i is reconstructed for the protoform and is attested in several branches of Northern Caucasian. The reflection of a geminate group of intervocalic labialized fricatives in the Greek geminate labiovelars is the most difficult part of the suggestion (see above). The general historical difficulty mentioned in connection with the preceding word is valid here as well.

ε) The explanation of the Greek word as a borrowing from the Anatolian form of the satəm Pisidian type, in which the palatal is reflected as in Luwian-Lycian, seems more plausible, but the root has initial i as in many Hittite words with i < *e. This explains the vowel i present in these Anatolian (Pisidian and Pamphilian) forms and may continue the former *e. The appearance of Greek labiovelars in intervocalic

reconstruction) for ἀσκάς “skin, hide”, see Neu 1996, 114, n.38 (with a reference to Gamkrelidze and Ivanov). As to Szemerényi’s suggestion regarding the link of σιγαλόεις “shining, glistening” to Hurrian šehel- “pure” (Szemerényi 1974, 153; critically mentioned by Chantraine 1990, 1001), it seems confirmed by the stem in -al- of šeh-al- “pure” (Neu, ib., 194, n.195) and by a similarity in the usage referring to ritual objects, but the word penetrated Hittite as well and might have been borrowed into Greek through this language; on Luwian šihual- “luminous object”, see also Starke 1990, 342-343 (with an Indo-European etymology *seH-ul- “sun”); a Luwian loanword in Greek seems possible.

²⁹¹ Nikolayev 1985, 66-73 (some of the etymologies are far from acceptable, for which see below). In some of these borrowings (ib., 68, etymologies 14 and 15) Northern Caucasian affricates are reproduced by Greek combinations of a velar and another stop. An old borrowing from a Northern Caucasian language like Hurrian or from an Indo-European satəm dialect may be present in the Mycenaean Greek izza- if really a synonym for iqija “vehicle” (Panagl 1985, 289-290 with an improbable phonetic explanation by an internal Greek development).

position can be explained as an attempt to identify the group *-issw- of the borrowed term with the geminated -ikkw-/ik^wk^w-.

To test this hypothesis, a probable equivalence of the Mycenaean Greek proper name A-ri-qa and of Homeric Ἀρῖσβη cited above seems particularly interesting. If this identification is possible it might prove an equation reminiscent of the parallel forms for the name of the divine rider (satəm Κᾰκ-ασ/θῖβος : centum χᾰχ-ακβος): Anatolian -ισβη = *-isswa- / Mycenaean -iqa- = *ik^wa-.

This can be seen as a confirmation of the hypothesis similar to the one put forward by Starostin (on the equivalence of fricatives and palatals), but for much later contacts between the speakers of Greek and of an Anatolian satəm language with a reflection of consonants of the Luwian type. Such equivalences lead to the irregular behavior of certain phonemes.

At the time when these contacts might have taken place the two groups of Indo-European dialects became split due to the centum/satəm division: the Eastern Indo-European group lost Greek which, without becoming a satəm language, was separated from Indo-Iranian and Armenian by the Anatolians. At the same time in the Anatolian group Luwian-Lycian, becoming a satəm language, shifted to the west and to the south of Hittite and other centum dialects of Northern Anatolian. The Luwian-Lycian dialects became the neighbors of Greek in the northwestern part of Asia Minor. At that time satəm words may have been borrowed into centum dialects and caused such abnormal structures as that of the Greek word for horse, possibly being borrowed from a Pisidian form close to the Luwian one. Southern Anatolian languages might have been a source of borrowing for the Northern Caucasian languages.

ζ) Phonetic difficulties in accounting for the intervocalic group of consonants can be avoided if the centum (Hittite-Lydia-Palaic, that is "Northern"²⁹²) Anatolian languages are suggested as a source. The Indo-European palatal was reflected before

²⁹² Melchert 1994, with data on the development of palatals in each dialect.

*u/w as a velar in initial position in the Lydian name for "dog" Κανδανύλης ²⁹³ and in a corresponding noun suggested in Hittite LÚkuwan/kun- .²⁹⁴ In Hittite the old voiceless phoneme in intervocalic position should have been rendered by a double cuneiform sign spelling to reflect either a fortis/lenis contrast or a difference in length (gemination).²⁹⁵ Thus Northern Anatolian might have had a term with the structure of this group similar to *-kwkw/k^wk^w- though not yet attested. The development of the former e > i is normal in Hittite, Lydian and Palaic. Homeric ἰχὼρ/ἰχῶν "the blood of the immortal gods" may be cited as another example of the same type which had been borrowed from a Northern Anatolian form cognate to Palaic ešhur < *ešhōr (Tocharian A ysār < *yāsōr > B yasar "blood")/ešha < *ešhar (Old Indian āsṛ-k "blood"), Hittite ešhar > išhar "blood"²⁹⁶ (Luwian ašhar , quasi-ergative ašha-ša = dialectal Tocharian B Perlativ yasārsa).

To understand the possible links of the Mycenaean word to the (Northern) Anatolian tradition as well as (although in an indirect way) to the Hurrian one, it is important to study parallels with the title of the Mycenaean goddess $[\text{po-}]ti-ni-ja \textit{i-qe-ja}$ = Potniāi hiqq^weiai "(to) The Lady of horses".²⁹⁷ This epithet is a more concrete variant of the title Πότνια θηρῶν "Lady of the Wild Beasts", which refers to a Cretan goddess who matches Cybele and Artemis in Asia Minor.²⁹⁸ The Greeks

²⁹³ Ib., 359; Ivanov 1964: "dog-strangler (= killer)".

²⁹⁴ Melchert 1989.

²⁹⁵ Ivanov 1963; Melchert 1994, 20-21. It is not yet clear which member of the opposition was really geminated.

²⁹⁶ Sayce 1929, 273; Kretschmer 1930, 10: "wir kommen zu der überraschende Annahme, das ἰχὼρ die hethitische oder einer kleinasiatischen Sprache angehörige Form des idg. ēšōr = Griech. ἡαρ ἔαρ ist, die im Hethitischen *iḥar geschrieben worden wäre"; Heubeck 1961, 81; Gamkrelidze and Ivanov 1984/1995, I, 798. The relatively old age of the vowel in the oblique cases of the Old Hittite noun is supposed by Starke 1990, 558; on Palaic forms important for finding the accentological reason of the absence of -p in ἰχῶν , cf. Melchert 1994, 226 a.o.

²⁹⁷ PY 312=An 1281, Ventris and Chadwick 1973, 483, 548; Lejeune 1958. On the archaeological evidence, cf. Levi 1951, fig. 4a.

²⁹⁸ Hanfman and Waldbaum 1969; Laroche 1960c; Diakonoff 1977. Some of the places dedicated to Artemis had names linking them to horses, e.g. Πωλώ in Thasos. For recent etymological studies on Artemis, cf. Szemerényi 1994.

themselves had a recollection about an Anatolian origin for the cult of Artemis. In Sparta, where both her images (one related to the initiation of young males and another with the different function of raising small babies) were well integrated into the life of the state²⁹⁹, "there were Spartan rituals that centered on Lydian themes, such as τῶν Λυδῶν πομπή, the 'Procession of the Lydians' mentioned in Plutarch *Aristeides* 17.10 in connection with the cult of Artemis Orthia. We may compare an event known as the 'Dance of the Lydian Maidens', at a festival of Artemis at Ephesus.'³⁰⁰

Mycenaen A-te-mi-to = 'Ἀρτέμιτος (Genitive)/A-ti-mi-te = 'Ἀρτίμιτει (Dative) corresponds to Dorian and Beotian Ἄρταμις, Ἄρτεμις in Delphi, etc., and shows the instability of the vowel e/i/a. The name of the Lydian goddess corresponding to Greek Artemis in the form Artimu- is attested many times in Lydian inscriptions: Nominative Singular Animate gender Artimu-ś (with loss of the ending before enclitic -k: Artimu-k in the Lydian-Aramaic bilingual text³⁰¹: Lydian artimu-ś ibśimsis artimu-k kulumsis = Aramaic 'rtmu zy klw w'pššy "Artemis of Ephesus and Artemis of Koloe"), Dative-Locative artimu-λ, Accusative artimu-ν, possessive adjective artimu-lis.³⁰²

The Meskene/Emar list AN cited above makes possible a suggestion on the origin of Greek *Arte*/i/ami-s and Lydian Artimu- from the Hurrian epithet of the goddess ar-ta/du-ma-an-zi = URUKI "of the City, belonging to the City", ar-du-ma-še-na-za.³⁰³ The epithet is derived from Hurrian ardi- "city" (Uartian ardi-ni "The City = Muşaşir, the capital of Urartu and the cultic centre of the god Haldi", cf. Ardi as an Uartian name

²⁹⁹ Vernant 1986, 15-24.

³⁰⁰ Nagy 1990, 273, n.18 (with an emphasis on the local Spartan interest in such quasi-foreign rites important for the state and the city).

³⁰¹ Kahle and Sommer 1930, 66, with a suggestion followed by all specialists about a purely phonetic reason for the disappearance of the ending before an enclitic (otherwise one might have thought of a zero *Casus Indefinitus*, known in Hittite particularly in proper names).

³⁰² Heubeck 1969; Gusmani 1964 s.v.

³⁰³ Laroche 1980, 54 and 201; 1989, 11 (n.205). Laroche gives the second cuneiform sign of the name in two different readings.

for a goddess³⁰⁴). According to the Meskene/Emar list, that was the epithet of the Lioness-Ishtar—Hurrian Firingar. This Hurrian epithet refers to the quality of the goddess which was preserved and developed in the archaic Greek tradition for which “the connection between the ‘polis’ and the female divinity”³⁰⁵ was particularly important. The link between *the City*-πόλις and a female goddess and her priestess is particularly clear in the cult of Pamphylian Artemis:

À Pergé, en Pamphylie, dans le sanctuaire d’Artémis *Pergaia*, divinité ‘poliade’, la prêtrise ne pouvait être exercée que par une femme, citoyenne (*astē*), résidant dans la ville (*āstu*), née de parents habitant la cité depuis trois générations en ligne paternelle et maternelle. Prêtresse à vie, elle se charge de tous les sacrifices publics et privés; et à chaque nouvelle lune, elle doit sacrifier pour le ‘salut de la cité’... Sacrifice *politique* dont la référence à la cité est triple: fonction ‘poliade’ d’Artémis; appartenance de la prêtresse à la ville-cité sur la profondeur de trois générations; commensalité réservée aux épouses légitimes, vicaires des citoyens les plus intimement associés aux décisions de la cité.³⁰⁶

It is the relation alone of the goddess to the City-Polis (“fonction ‘poliade’” — “urbanistic function”) that is expressed in the Hurrian epithet. Although the adjective referring to this aspect of the goddess might seem to contradict the wild element inherent in her cult, it has been shown in recent studies that in Artemis not so much nature by itself but its carnival relation to society was stressed.³⁰⁷

If the name of Artemis was borrowed into Greek from Hurrian through probable Lydian mediation, it may hint at the direction in which cultural influences might have worked in ancient Asia Minor. As the Anatolian goddess was connected to horses, the origin of her name may shed light on the way in which the Greek name for horse was

³⁰⁴ Diakonoff 1951, 28 a.o.; Arutunian 1985, 34-35; Meshchaninov 1978, 349-352; Melikishvili 1960, 147-149; 417. As a Northern Caucasian correspondence the stem *HdūrV “plot of land, yard, enclosure” is reconstructed on the basis of Archi dori “place for community meetings”; Chechen *arda-š* “allotments, plots of arable land” (Plural); Western Caucasian *d’ə “plain, field” > Abkhaz *a-dwə*, Diakonoff and Starostin 1986, 26; 1988, 175; Nikolayev and Starostin 1994, 557.

³⁰⁵ Freidenberg 1997, 277. See a special article on this subject by Vernant with an analysis of Artemis’ social role: Vernant 1988, 37-38. Cf. on Trezene: Calame 1996, 228.

³⁰⁶ Detienne and Vernant 1979, 195-196.

³⁰⁷ Dawkins 1927; Ellinger 1984; Vernant 1989, 183-209.

changed. It might have been borrowed from one of the Northern Anatolian Indo-European languages. The weakness of this hypothesis on the borrowing into Greek from Northern Anatolian, despite all its merits, is the absence of any textual evidence for the respective Anatolian forms (incidentally preventing one from deciding on the source of the initial *h-* in the Greek word, which in Anatolian might have had a laryngeal as its first phoneme). Excavations in progress might help find such documents. In any case it is probable that the Greek term was borrowed (either from a Northern Anatolian language or from a Northern Caucasian one) and because of this alone does not fit into the common Indo-European scheme. All other Indo-European groups surveyed above continued the old tradition without interruption.

It is interesting that (unlike Indo-Aryan and Italic) Greek does not show an opposition of masculine and feminine stems, the former of which serves both functions. Thus it seems that Greek possibly did not participate in the creation of a feminine counterpart³⁰⁸ to the old name after the two-gender system preserved in Anatolian had been substituted by that consisting of three genders. Also unexpected is the practical absence of typical Indo-European "horse" personal names³⁰⁹ noticed in Mycenaean (the only example that remains unclear being [I?]-qo-te-wo³¹⁰). This feature of Mycenaean onomastics differs both from later Greek tradition with its marked predominance of names with first or second element *ἵππο-*³¹¹, and from the rest of Indo-European, where such names also remained popular. But derivatives and compounds with *iqo-* > *ἵππος* as well as many Indo-European formulae containing

³⁰⁸ On the ambiguity of the long vowel in Homeric *ἵππημόλογός* see Chantraine 1979, 25 (cf. there also on a proper name *ἵππη*; these forms may still be traces of a lost feminine stem similar to the old Indian one).

³⁰⁹ With the substitution of a new lexical item for an old one this semantic tradition is continued in such Slavic last names as Russian Konev, Konevskoj, hinted at in Chekov's short story "A horse last name" ("Loshadinaja familija").

³¹⁰ Landau 1958, 231; Milewski 1969, 149-150 (with a strictly cultural explanation for the absence of this type of name).

³¹¹ More than 230 names are recorded in Bechtel and Fink 1894 (Chantraine 1990 s.v. mentions 150 compounds with the Greek noun). In Sanskrit there are approximately 70 names with the corresponding noun; in Avestan 19 names (in a text that is relatively much shorter than those known in the two other traditions: Milewski 1969, 59, 67).

the word were continued in the Greek tradition, although the sound shape of the word had changed. The new shape of Greek ἵππος excludes phonetic similarity to ὠκύς "swift", such as may be presupposed for the Proto-Indo-Iranian-Greek (Proto-Eastern Indo-European) dialect. This substitution caused the distortion of the anagrammatical structure of a poetic formula like Old Indian Vedic áśvās... āśávas "swift horses", Avestan aspāñhō āsauuō (with the same meaning), which might be understood as a *figura etymologica* by scholars supposing that the noun was derived from the adjective.³¹² The phonetic similarity of the two parts of compounds like ἵππ-ὠκής "riding in a swift chariot" is no longer discernible. In this way they differ from the corresponding (though differently sequenced) Old Indian áśvāspa = Avestan āsu.aspa-, cf. āsu.aspō.təma-, āsu.aspī- "having rapid mares", āsu.aspya "the richness consisting in rapid mares".³¹³

The semantic structure of these Indo-European compounds may help in solving another problem concerning the connections between Hurro-Urartian, Northern Caucasian and Indo-European terms related to names for horses. According to I. M. Diakonoff, S. L. Nikolayev and S. A. Starostin, the Urartian name for horse seen in Menua [a]r-ši-bi-ni (for which no interpretation in the inscription is given) can be understood as a member of a large group of Northern Eastern Caucasian names for *eagle*, the protoform of which, despite many phonetic and morphological difficulties³¹⁴, has been reconstructed by them as *(*ār)-čwāmʷV. These scholars

³¹² An old idea of Curtius revived in our century by Güntert and Specht, see bibliography in Lehmann 1986, 15; 1993, 247; Blažek 1992, 10 (as an alternative to Sino-Caucasian borrowing). The reconstruction of the Indo-European prototype of the formula in Watkins 1995, 12, presupposes *H₁ in the initial position of each of the two words, see on such a reconstruction above.

³¹³ Bartholomae 1979, 339.

³¹⁴ The main morphological problem is the initial *ār- which, besides the Urartian word, is found in Proto-Nakh *ār-čiw "eagle" > (Chechen ār-zū, Ingush ār-zī, Bacbi ar-čiw), Lak b-ar-zu, Proto-Lezghian *m-ar-č "eagle" and Proto-Dargwa *ar-čimī, but is absent in Avar-Andi *čūm'i "eagle", Tsezi *cuhV, Khinalug čimīr "bird". The place of metathesized labialization in initial position is phonetically irregular in Lak (b-), Proto-Dargwa and Proto-Lezghian (m-, where also the feature of being nasalized had moved) and the kind of affricate reflected in Dargwa as well as the initial consonants in several

suppose that the Armenian form *arcui* "eagle" (dialectal *arciw/arciv*) as well as Georgian *arc'ivi* "eagle" is borrowed from Northern Eastern Caucasian; Nikolayev adds to this as another borrowing the Hittite term *ḫaštapi* describing a bird used in oracles (although it need not be an "eagle", and the phonemic relationship does not seem simple, cf. below on another possible solution).

There is another hypothesis which states that the Urartian term is a relatively late borrowing from Indo-Iranian (cf. Avestan *ərəzi-pya-* "eagle < swiftly-rushing", Old Persian *ἄρξίφος· ἀετός παρὰ Πέρσας* "eagle in Persian" (Hes.), *ἀρδύφιος*, *ἀρδύβιος*, Modern Persian *ālūh* "eagle", Old Indian *ḡjīpya-* "flying straight ahead" usually as an epithet of the eagle in the *Ṛg-veda*³¹⁵). From the semantic point of view the Indo-Iranian forms seem to produce a good explanation for the use of the compound as a horse name. Avestan *ərəz-ra*³¹⁶ = Old Indian *ḡj-ra-* "swift" is closely

Tsezi languages, see Nikolayev and Starostin 1994, 371 on all these difficulties. On relations to the forms in other languages, cf. Diakonoff 1951b, 115-116; Diakonoff 1978, 31; Nikolayev 1985, 61; Diakonoff and Starostin 1986, 45; 1988, 184; Gamkrelidze and Ivanov 1984/1995, 92, n.23; 457; Xachikian 1985a, 54, 141-142, n.59. A Hurrian equivalent to the Urartian word is not known, but in a Hittite Bogazköy text of Kizzuwatna provenance the name "golden eagle of Teshub" is given as *e-ri-bu-u-uš-ki-iš* (K Bo XV 37 I 21), on the basis of which Hurrian *eribuški* may be deduced (Laroche 1980, 83), where *-(u)šk-* can be a Hurrian suffix (on other words with this suffix, cf. Xachikian 1985a, 65); on a possible link to Nuzi *erupu-* see: Haas 1982, 228, n.293; on the name of the Urartian city *Erebu-ni*, cf. Ivanov 1993, 119, n.47. If Hurrian *eribu-* is equivalent to Urartian *aršibi-* the retention of **-r-* before a lost fricative is exceptional in Hurro-Urartian diachronic phonology, where such groups are usually simplified in the opposite manner through the loss of **-r-*; it might be seen as a trace of a name of foreign origin. Cf. also the discussion on *er-* "eagle (?)" (Akkadian *erū[m]*) in Neu 1994, 45.

³¹⁵ Bartholomae 1979, 354, add. 144; Benveniste 1946, 67; Grantovsky 1970, 291-297 (N 63); Dzhaugian 1982, 136. The *ξ* in the first Greek form seems to stand for *ζ* = [z]. As it is supposed that the Indo-European adjective **H(e)org-i-* had two meanings: "bright, brilliant > white" (Hittite *harki-* "white" = Tocharian A *ärkd*) and "swift" (as for instance in compounds related to the Urartian word) it is interesting that Northern Caucasian seemed to have also borrowed an Indo-European derivative from the first use meaning "silver" (Lafon 1933). A remark on the suffixed form of "silver" in Indo-European as different from the root forms in Northern Caucasian (Starostin 1988, 131-132) does favor the Northern Caucasian provenance. As metals are usually named on the basis of their color the adjective should be the original source. Indo-European adjectives always have suffixes. On the age of the use of silver in connection to lead in the ancient world, cf. Ivanov 1983a.

³¹⁶ Bartholomae 1979, 355. On the relationship between the suffixes **-i-* : **-ro-*: Wackernagel 1905, 59-60; Benveniste 1935, 12, 80; Chantraine 1990, 104.

related to *ərəz-i-* = Old Indian *ṛj-i-*, the latter being its substitute in the first part of an archaic compound according to the old Indo-European rule; the archaic use of adjectives in *-i-* in Indo-European compounds is supported by the Hittite name for a bird *pattar-palḫ-i-* “< wing + broad”, where the first root may be identical to **p(t)-* in the compounds cited above. Later the rule concerning the change of *-ra-* > *-i-* ceased to be obligatory. In a period when the rule had no longer been valid a stem in *-ra-* was combined with the name for a horse in a compound that might be easily reconstructed for the late stage of Indo-Iranian: Avestan *ərəzrāspa-* = Old Indian Vedic *Ṛjraśva*³¹⁷ < **ṛǵ-ra-akwa* < **Hṛǵ-ro-ekwo-*. From this Indo-Iranian etymology it follows that the adjective formed from the stem **ṛǵ-* was used to describe the quick movement of a horse or of a bird; the comparison of horses to birds is a usual one in ancient Indo-European traditions as seen both from mythopoetical texts and from material objects.³¹⁸ This semantic interpretation is supported by synonymous compounds: Homeric Greek *ὠκύ-πους* “swift-footed” (about horses), *ὠκυ-πέτης* “swift-flying”; with the reverse order of elements: *ποδ-ὠκής* “swift of foot, fleet-footed” (also *ποδ-ὠκεια* “swiftness of foot”), *πτερυγ-ὠκός* “swift-winged” (Aesch.). Thus these Indo-Iranian forms help in discerning the internal semantic structure (the *inner form* in Humboldt’s sense) of this epithet as applying to *horse* and the role of *-i-* in a compound, though the Northern Caucasian form is enigmatic from this point of view. This difference points to a probable borrowing from Indo-European into Urartian and later into some Northeastern Caucasian dialects such as Nakh, Dargwa, Lak and Lezghian. Armenian, where the form may be a normal correspondence of the Indo-

³¹⁷ Bartholomae 1979, 355. On the relative chronology of this element of a compound, see Wackernagel 1905, 61.

³¹⁸ Ivanov 1974. On the emotional side of calling a horse “a bird” (Yagnobi *jarmār, janvār*) in an archaic Iranian tradition, see Andreev a.o. 1957, 146, n., 266. As B. Vine has observed, the same association can be seen in the suggestion of a possible connection between Luwian *pīḫašsašši-š* (cf. Starke 1990, 103 ff.) “shine, lightning” and the name of Pegasus, on which see Hutter 1995.

Iranian one³¹⁹, might have been one of the sources of borrowing into Georgian and the Northeastern Caucasian languages. To the *satəm* dialectal Eastern (Indo-Iranian-Armenian) Indo-European compound *ǵǵi-pyo- there is a centum correspondence in Homeric Greek αἰγυπιός "hawk"³²⁰, Ancient Macedonian ἀργιόπους· αἰτός, Μακεδόνες "an eagle in Macedonian" (Hes.), cf. Homeric Greek ἀργιπόδας "swift-footed"³²¹; thus there is a possibility of reconstructing the compound *Hǵǵi-p(t)yo-/ped/- for the early period of the history of Indo-Iranian-Armenian-Greek (Macedonian seems closely related to the latter within the same Indo-European dialectal group). Nikolayev, supposing along with Starostin a direction of borrowing from Northeastern Caucasian into Indo-European, suggested that "in Indo-European one may observe a regular substitution of palatalized velars for Northern Caucasian frontal affricates."³²² But as it has been stressed above, there is a possibility for such a substitution only in an earlier period when no affricates existed in Indo-European. If in this case the borrowing should be shifted to the dialectal period when Urartian was in contact with separate Indo-Iranian dialects, such a substitution would have seemed unnatural, since the latter had affricates at that period. Thus the direction of borrowing from an Indo-Iranian dialect into Urartian can be corroborated by phonetic reasoning as well.

In centum Western Indo-European the reconstructed Eastern form has its semantic counterpart in Latin *accipiter* "bird of prey, hawk, falcon" identified with Greek ὠκύπτερος "swift-winged" (see above on the other combinations of the same type). Just as in a Common Slavic name for *hawk* (Russian *iastréb* < *jasütřebū < *Hōk-u- + p.t-r-

³¹⁹ Hübschmann 1897/1972, 425-426; Acharian 1971, I, 319-320; Greppin 1978, 45; Lamberterie 1978, 251-262. The word belonged to the category of Armenian terms corresponding to those of Vedic poetic language, see above on *ji* and references on the type of Armenian words: Porzig 1954.

³²⁰ D'Arcey Thompson 1936, s.v.; Chantaine 1990, 31; Meier-Brügger 1995 (with further bibliography). It is supposed that the initial syllable has been changed due to the analogical influence of two other words in the same semantic field.

³²¹ It is supposed that one has to read the Macedonian gloss as ἀργίπους; Kallérís 1954, 106, 238; Chantaine 1990, 104; Poghirc 1983, 43-44.

³²² Nikolayev 1985, 61.

with voicing of the metathesized labial stop), where a *satəm* correspondence to the Latin form can be seen³²³, it seems that Hittite *ḫaštapi*, if it was borrowed, might represent a corresponding form of a *satəm* Luwian dialect (**Haš* + *tap/b-* < *Hōk* + **p_ht-r*, with loss of *-r* in a final non-accented syllable and metathesis of the labial stop of the same type as in the Slavic word).

There are at least two more Northern Caucasian words for *horse* that might be compared to dialectal Indo-European terms.

The local Indo-European term for "foal" **pōlo-s* is found in a group of dialects but still belongs to the relatively old part of Indo-European technical vocabulary since it is attested in Mycenaean Greek (*po-ro*, Homeric *πῶλος* "foal"), Albanian *pelë* "mare" < **pōlnā* and in all the ancient Germanic languages: Gothic *fula* "foal, colt", Old Icelandic *foli* (masculine), *fyl* < **fulja*, Old English *fola*, Old High German *folo*. It seems possible to compare it to the Northern Caucasian **farnē*, reconstructed on the basis of Avar *xʷáni* "horses" (collective form); Khvarshi *xaram* "foal"; Lezghian *xʷar* "mare"; Western Caucasian **xʷara* > Adygh *fāra* "thoroughbred horse".³²⁴ The Northern Caucasian word belongs to a very small class of lexical items beginning with *f-*. From seven words included in this class in the dictionary by Nikolayev and Starostin, two other lexemes (the numeral "five" and the noun "fist" related to it) are also shared with Indo-European.³²⁵ The connection between the Northern Caucasian and Indo-European terms of this class seems beyond doubt. To establish the direction of borrowing one has to keep in mind the relative chronology of the dispersal of

³²³ Ernout and Meillet 1994, 5 (*-i* may be explained by the use in a compound, see above on the old rule); Machek 1957, 177 (with the suggestion *p_ht-r* > **trep-* > **-trebb-* and of a later change of the geminate **-ebb-* > **-ēb-*); in Hittite the single *-p-* points to a former voiced (or glottalized) phoneme. However, according to Vey, the Slavic group *st* < **pt-*, which would have explained *jasūt-* < *asūt-* < *ōkū-pt-*, but in that case the labial stop belongs not to the root in the Slavic word, but to the suffix **-emb(h)-*.

³²⁴ Nikolayev and Starostin 1994, 425-426. On the Indo-European word, see Lehmann 1986, 130.

³²⁵ Starostin 1988, 119.

Northern Caucasian, which is close to the earliest date of horse domestication (around V mil. B.C.).³²⁶ Thus a Proto-Northern Caucasian term should have penetrated into some Indo-European dialects. The place of the borrowing depends on the historical geography of migrations. At least for Greek as well as for Albanian, which belonged to the satəm Eastern Indo-European dialectal group, the possibility of borrowing from Northern Caucasian is quite real. If the word was borrowed from Northern Caucasian, then the Indo-European *-l-* (**-ln-*) in intervocalic position is the result of the accommodation of the original *-r-* (**-rn-*) in the source of the borrowing.

There is a possibility of a distant (and accordingly very old) relation between this group of words and the Hittite word *kurka-* "a foal" compared to Greek *κύρνος*³²⁷, which might be a common borrowing from the same Northern Caucasian stem to which different suffixes were added in each of the Indo-European dialects. The stem in Northern Caucasian might be **gwálV* "horse" > Nakh **gile* "horse, steed" > Chechen *gila*, Proto-Tsez-Khvarshi **guRu* > Tzezi *gulu* "stallion, horse".³²⁸ The Proto-Tsez-Khvarshi root could have been the source of both the Greek and Hittite words, with a characteristic change of voiced into voiceless consonants depending on the rules of Hittite phonology. Another borrowing from the same source (but without a suffix and the diminutive sense connected to it) might be Latin *caballus* "work horse" which ousted the earlier general term in Romance.³²⁹ This word and such dialectal terms

³²⁶ As the earliest possible area of domestication is near the proposed proto-Finno-Ugrian homeland, a possible link to the Ugrian name for horse reflected in Hungarian *ló*, Mansi *lo(w)*, Khanty *ɬlaw* deserves to be discussed (the Tocharian etymology suggested for the latter does not seem persuasive; see Napólskix 1996 on a later borrowing in Altaic). It has been suggested (Ivanov 1984) that the Indo-European term can be traced back to an earlier compound, the second part of which consisted of this word cognate to Ugrian **lo* and the first of which was the name for "child" spread in different families, but the weakness of the suggestion is the universal character of the first element, see above on Latin *puer*, Yagnobi *pulla*.

³²⁷ Forssman 1980; Melchert 1994, 132. It is not easy to conclude whether the words should also be compared to Iranian terms like Persian and Tadjik *kurra* "foal", since the latter is connected to the onomatopoeic appeal to address horses: cf. Vakhani *kurr-kurr* "Come!" in this function and *kurrást* "neighing of a horse", Griunberg and Steblin-Kamenskij 1976, 371-372, 656.

³²⁸ Nikolayev and Starostin 1994, 445-446.

³²⁹ On a possible non-Indo-European source in a language of Asia Minor, see Ernout and Meillet 1994, 80.

related to it as Albanian *kāl* "horse"³³⁰ may have been borrowed from the source common to this Northeastern Caucasian stem. A direct borrowing is excluded because of the difference between the voiced consonant in Nakh and Tsez-Khvarshi and the voiceless one in the Latin loanword as well as between the *-w-* glide in the former and the group *-ab-* in the latter. The possible intermediary language remains unknown, although a language with the consonantal structure of the Hittite (Northern Anatolian) type might be possible. But the term might have had an earlier link to another important word for "foal" discussed above.

Both Indo-European terms definitely connected to the Northern Caucasian lexemes with the initial rare phoneme **f-*—the numeral "five" and the noun "fist" semantically linked to the first word—show an alternation of the initial voiceless labial stop **p-* with a corresponding labiovelar **kʷ-*: **penkʷe* > Proto-Celtic **kʷenkʷe* "five"³³¹, Latin *quīnque* (with dissimilation contrary to the assimilation in Gothic *fimf* < **pemp-*); Old English *fȳst*, Proto-Slavic **pěstī* "fist": Lithuanian *kūmstė* "fist".³³² The same connection between Proto-Northern Caucasian **f-* and Proto-Indo-European *p-* alternating with Hittite *ku-* < **kʷ-* may be suggested also for the names for "foal", but in this case too the difference between *-r-* in Northern Caucasian and Hittite and *-l-* in the rest of Indo-European should be taken into consideration.

5. Some names of wheeled chariots and of related objects.

The borrowing of a word for *horse* should have been connected not only to the domestication of the horse but to the use of *wheeled vehicles-chariots* of a new type.

³³⁰ Although the main Indo-European word for horse was ousted by this borrowing in connection to the latter, some old formulae were preserved: thus in an Albanian folksong the expression *kualt te putise ze te sh-krehe* "to water (< modern Greek *potise*) horses and to clean them with a brush" (Lambertz 1959, 200-201) contains a trace of an old Indo-European technical meaning for a verb also preserved in Slavic (Russian *skresti* "to clean" about a horse, *skr-eb-nica* as the name of a special instrument); another dialectal synonym is represented in Luvian *kuš-ala-* as a similar name for an instrument, Starke 1990, 327-328, 515.

³³¹ Thurneysen 1946, 246, § 392.

³³² Gamkrelidze and Ivanov 1984/1995, 361, 366, 747 (with references).

From the works of Childe it is clear that the spread of vehicles played an important role in the early Indo-European migrations. Recent studies³³³ have shown an absence of the exact correspondence between the probable area of the domestication of the horse and the early spread of wheeled vehicles, particularly of the light two-wheeled chariots that by the II mil. B.C. had become the main weapon of separate groups speaking Indo-European dialects and of their neighbors. It seems that the intersection of the two achievements—the invention of light chariots (for technological reasons more probable in a region near the Near East) and advanced methods for horse training—was decisive for the Indo-European migrations of the II mil. B.C. as well as for the use of chariots drawn by horses in the armies of the Near Eastern empires of this period. From this point of view the discovery of this type of chariot in Mozan/Urkesh seems extremely important.³³⁴

A study of the temporal and spatial distribution of the main terms for wheeled vehicles may serve as an introduction to the topic. The word *hu'iluganu(m)* in Old Assyrian tablets from Asia Minor, considered as a borrowing from an indigenous language as well as a Hittite term for this kind of a chariot *ḫuluga-*nni**- (already in the most archaic texts³³⁵), seems to have been borrowed from

³³³ Haudricourt 1987; Häusler 1985; 1986; 1994; Littauer 1977; Littauer and Crouwel 1974; 1977a; 1979; 1977b; 1986; Piggott 1968; 1969; 1974; 1979; 1983; 1992; Sherratt 1986; Kozhin 1985; Gorelik 1985; Trifonov 1987; Kuz'mina 1997, 87, n.28 (bibliography); Anthony and Vinogradov 1995; Adams and Mallory 1997, 640-641. For earlier literature, cf. Wiesner 1939; Childe 1950; 1951; 1954a; 1954b; Piotrovskij 1962a. The earliest types of Urartian vehicles (carts and chariots) of the II mil. B.C. are described in detail in Esajan 1966, 131-143; 1994.

³³⁴ G. Buccellati, personal communication.

³³⁵ The Old Hittite ritual K Bo XX 18 + K Bo XXV 65 Rs. 7', Neu 1980, 140; 1983, 69-70, n.291. Particularly interesting is the ritual KUB XXIX 1 I 23-24 (a later copy of an archaic Old Hittite text) in which the king says that the (divine) Throne has brought him the power and the vehicle (*ḫu-lu-gan-ni-en*), on the interpretation of which, see: Ardzinba 1982, 88-89, 194-195 (with literature). Cf. also the role of this symbol in the rite of the tempest: K Bo XII 74 + K Bo XXI 25 + ABoT 9 Vs. I 28; the ritual of Hattic women *zintulhi*: K Bo XI 73 Vs. 14', 21'; a fragment concerning the Hattic god Zithariya: KUB X 61 II 6 5; a fragment on the royal journey to Nerik: K Bo 2691 Rs. VI 5'; the festival of Antahšum: KUB X 17 I 21, 22, 27; the autumn festival: K Bo XXI 78 III 13; ritual fragment VAT 7474 Vs. II 2', a fragment mentioning the god of Defense: K Bo 3339 Vs. II 9'; a fragment of a rite for the queen and the king: K Bo 2689 Rs. V 8'; Alp 1983, 210, 239-240, 252, 286, 290, 296, 358; see also below on this word in connection to the royal palace gate.

Hurrian.³³⁶ It is connected to the Proto Northern Caucasian term for the wheel *hwəlkwē > Chadokolob dialect of Avar horkó “carriage”, Lak harkw “carriage wheel axle”, Dargwa ʔarkw “axle, carriage” > Akushi dialect of Dargwa ark, Western Caucasian *kʷ:ə > Adygh kʷə “carriage, vehicle”. A form having (like kurka-discussed above) *-r- corresponding to *-l- (that has been retained in the Hurrian form just cited, see above on -l- < -r- in *pōlo-) was possibly borrowed into the Indo-European dialect reflected in Hittite, (Hieroglyphic) Luwian and Tocharian: Hittite hurki- “wheel”, probably also Hieroglyphic Luwian CURRUS-wa/i + -ra/i-za-ni/nī-ná/na “chariot” (Karkamis A 11b, 3; A 12, 2) with a development of the palatal phoneme according to the satəm type³³⁷, Tocharian A wärk-ant- “wheel”, B yerkwantai “wheel”. The dialectal distribution of the terms seems particularly interesting: a Northern (probably Eastern) Caucasian dialect that was the source of this loanword had separated from Hurro-Urartian before that time, and the Indo-European dialect that borrowed the word is a predecessor of the centum Northern Anatolian (Hittite) and Tocharian and possibly of the satəm Hieroglyphic Luwian, but not of the other dialects (which of course might have lost the word later, as it might have been ousted by new terms related to technological innovations).

From the four Indo-European dialectal terms for “wheel, wheeled vehicle” discussed in recent studies³³⁸, Hittite, Luwian and Tocharian shared this *first* word borrowed from Northern Caucasian, but Tocharian also had another reduplicated term for vehicle (A kukäl, B kokale “carriage”) going back to the *second* term common to Eastern Indo-European (reduplicated Old Indian cakra “wheel”; Avestan čaxra-

³³⁶ Ivanov 1963, 15 (not attested in Hurrian proper); 1980, 115; on Northern Caucasian in its relation to Indo-European: Nikolayev 1985, 62; Starostin 1985, 88-89; 1988, 130; Nikolayev and Starostin 1994, 498.

³³⁷ Starke 1995, 126, n.259. A comparable loss of the initial laryngeal occurs in Milyan (Lycian B). On the Hittite word and its comparison to Tocharian cf. Ivanov 1980, 112-115.

³³⁸ Gamkrelidze and Ivanov 1984/1995, I, 621-623; Delamarre 1984, 125-127; Meid 1994; Mallory and Adams 1997, 640-641; cf. Anthony 1995, 557, fig. 1, where, unfortunately, important terms connected to the earlier period and reflected in Hittite are missed, together with other mistakes, such as the omission of the common Celtic and Balto-Slavic term for the wheel, etc.

"wheel", Middle Persian *chr/cxr*, Parthian *cxr*, Modern Persian (Farsi) *čārx*, Eastern Iranian Ossetic *calx*, Khwarazmian *cxr* "wheel", Sogdian *čp/čr* "cakra", Vakhān *cətr* "spindle"³³⁹; Homeric Greek κύκλος "ring, circle", κυκλέω "wheel away, carry forth", εὖ-κυκλος "well-wheeled", τετρα-κυκλος "four-wheeled", the personal name Κυκλεύς = Mycenaean *ku-ke-re-u*³⁴⁰; Phrygian *κ(κ)λην· τήν ἄρκτον τὸ ἄστρον· Φρύγες* (Hes.)³⁴¹ and Germanic (Old Icelandic *hvæl* < **kʷekʷ*-l-[on] > **hwe[h]wlaz* > Old English *hwēol/hweogol* "wheel"³⁴²). A non-reduplicated derivative from the same root designates "wheel" in Western Baltic (Prussian *kelan* and derivatives like *kelle-wesze* "driver", *kele-ranco* "one of the poles in the frame of the wheeled vehicle"; in Eastern Baltic preserved only in an archaic compound: Latvian *du-celis* < **dwi*- **kʷel*- "two-wheeled vehicle"³⁴³), Slavic (**kolo* "wheel", plural **kola* "wheeled cart") and Celtic (Old Irish *cul* "carriage"). It can be suggested that

³³⁹ The last word (Griunberg and Steblin-Kamenskij 1976, 318) is contaminated with another stem. See on the data: Abaev 1958, 287-288; Oranskij 1979, 140-142, n.16; Edel'man 1986, 157-158; Benveniste 1929, 91. The Iranian word for "wheel" in its mythological meaning was borrowed into Northwestern Caucasian variants of the Nart folk epics, on the motif of which see Dumézil 1978, 95-122. A probable Kassite borrowing in Akkadian ¹⁰*šakrumaš* "an officer related to chariots and horses; a commander of two chariots on a military campaign" (= Egyptian *jdwn n tj-n-ḫttr*, Edel 1994, II, 24, 30, n.7) belongs to possible Mesopotamian Aryan terms. A link to Old Indian *cakra* seems probable.

³⁴⁰ It seems possible to suggest a connection to the name of Kikkuli- as representing the centum (possibly Northern Anatolian) variety of the stem, but the name is to be connected to the Hurrian name Kiklip-atal (Laroche 1966, 92, n.572) and to similar Kutean names; in all these cases an Indo-European etymology is not absolutely excluded.

³⁴¹ In spite of a skeptical remark by Chantraine (1990, 597) the interpretation of this gloss seems beyond doubt because of a number of exact semantic parallels to the representation of *Ursa major* (Big Dipper) as a carriage: Gamkrelidze and Ivanov 1984/1995, 592; 622; the Old Russian name is derived from the same root as Phrygian. The connections of Phrygian (although the facts known about the language are not numerous) and Tocharian are corroborated by other isoglosses (as well as Greek-Tocharian relations already stressed in the classic study of Benveniste on the dialectal place of Tocharian). It seems definite that Phrygian entered the Eastern Indo-European (Indo-Iranian-Armenian-Greek) dialectal group belonging to the centum branch which included Greek and Ancient Macedonian.

³⁴² Among possible disputable ramifications cf. Old English *gēola* "month (December/January)", Gothic *fruma juleis* "the month before the Yule month"; Old Icelandic *jöl* "heathen festival lasting 12 days" with a generalization of the intervocalic voiced (glottalic according to the glottalic theory) consonant repeated also in the first syllable of reduplication (on the phonological obstacles, see Lehmann 1986, 211, §8); cf. Greek *Κυκλεῖων*, name of a month called after the festival *τῆς Κύκλ(ε)ῖα*.

³⁴³ Toporov 1980, 305-307, 310; Mažiulis 1988, II, 157-158, 160; Eckert 1995, 50-53 (a possible Curonian borrowing according to Buga).

Luwian (Hieroglyphic) *zal-al-* “carriage, vehicle”, Cuneiform *zal-war/n-* “riding in a chariot” derives from the same root having undergone an early palatalization of the initial labiovelar (**k^wel-* > **zel-* > **zal-*).³⁴⁴ A corresponding verb existed in some Indo-European dialects and can be reconstructed for the oldest periods of the prehistory of the protolanguage³⁴⁵, but it has undergone semantic shift after the invention of devices based on rotary motion (wheel, spindle, etc.). Some probable verbal derivatives without reduplication are also used in reference to vehicles and their parts in other dialects: Mycenaean *qe-re-me-ne-u* is supposed to be equivalent to *πλημυόδετον* “a ring with which spokes are fixed to the hub”; cf. Homeric *πλήμυνη* “hub or nave of a wheel” derived from **k^wel-H-*.³⁴⁶

Another (*third*) name for the wheel/cart often shifted to the meaning “road, path, way”. It has also been reconstructed for Tocharian: A *wkām*, B *yakne aikne* “manner, way” < “road” (a semantic parallel to the cognate English *way*), very often as a second part of a compound, A *tāmne-wākñā kakmu* = Sanskrit *tathāgata* = Tibetan *de-bzün-γsēgs-pa* “he that walks in the same ways [as his predecessors]”³⁴⁷ in an archaic construction with a verb of motion. The stem in *-*n-* of this Tocharian derivative from Indo-European **wegh-* has been rightly identified in Old Indian Vedic *vāhana-* “any vehicle or draft animal” (*deva-vāhana-s aśva-s* “a horse that carries a god” in the *Ṛg-Veda*³⁴⁸), Mitannian (Mesopotamian) Indo-Iranian *wašanna* “prescribed path of the

³⁴⁴ On the meaning, see: Starke 1990, 337; synchronically Starke suggests the formation as derived with the suffix *-al-*, but historically an old reduplication (intensive **zal-zal-* or normal **zazal-*) might have been transformed. The phonetic development, typologically similar to palatalization of labiovelars in the other *satəm* dialects (Gamkrelidze and Ivanov 1984/1995, 79-80), can also be seen in several other stems, see Ivanov 1999.

³⁴⁵ Pokorny 1959, 639. On the Nostratic parallels, see Illich-Svitych 1971, 326-327. The original meaning referred to roundness as a visual archetype.

³⁴⁶ Plath 1994 (the laryngeal might belong to the suffix as also in **ret-H-*). The traditional etymology linking the Homeric word to the verb “to fill” (*π(μ)πλημι*) does not seem semantically satisfactory: Chantraine 1979, 215. But the suffix *-μνη* seems to point to an archaic formation.

³⁴⁷ Jäschke 1987, 565-566 (a modern native interpretation; for the other possible meaning: “Buddha = thus gone or come”: Edgerton 1953, 248).

³⁴⁸ In connection with the Old Indian image of *vāhanas* “the animals which the gods ride” one can suggest a comparison to the Hurrian deities standing on animals in the Yazılıkaya rock pictures

horse during the training"³⁴⁹, Sogdian ('nrx)-wzn "path (of the stars) = ring of zodiac"; Crimean Gothic *waghen* "currus", Old Icelandic *vagn* "carriage", Old English *waegn* "wagon", Old Irish *fén* "vehicle"; a related thematic stem with the meaning "vehicle" is present in Homeric Greek ὄχος, pluralia tantum "chariot(s)" (Mycenaean *wo-ka* in Pylos different from *i-qi-ja* in Knossos³⁵⁰) corresponding to Slavic *vozŭ and (with morphonemic recoding of Brugmann's law³⁵¹) to Old Indian *vāza* = Avestan *vāza* "vehicle, draft animal"; also common to Greek (gloss ἔχεσφι ἄρμασιν (Hes.)) and Old Indian (*vahas-* "shoulder of a draft animal") is a stem in *-s. One of the most ancient forms among these stems might be Old Indian *vahitra-* "square chariot with pole" (in lexical lists); "boat", Greek ὄχητα ὀχήματα (Hes.) and Latin *uehiculum*.³⁵² In Baltic an *-j/i-* (*-yo-*) stem can be found in the second part (*vezis) of the Old Prussian compound *kelle-wesze* "driver", *wessis* "sledge for riding", Lithuanian *vāžis*, *vāžỹ* "small sledge".³⁵³ A corresponding verb from which all these nominal stems (in *-n, thematic vowel -o, suffixes -s-, -i/-r- and *-tlo-) have been derived has the technical meaning "to ride on a chariot" in Eastern Indo-European (Old Indian Vedic *vahati* "drive", Avestan *vazāite* "drive", Greek Pamphylian *φεχετῶ*), Balto-Slavic (Lithuanian *vežti*, Proto-Slavic *vezon), Western Indo-European:

(Güterbock 1982, fig. B, C) and a similar Urartian representation of the god Haldi standing on a lion, Khodzhash a.o. 1979, 73, fig. 41, 57-58.

³⁴⁹ Starke 1995, 95-108.

³⁵⁰ According to Plath 1994 from Proto-Greek *ikk*iyā *wok*ā "a horse-driven vehicle".

³⁵¹ If this rule is accepted a remark in Porzig 1954 (in a book that in general should be singled out for its careful investigation of the dialectal relationship of vehicle terms in Indo-European) on the relatively late character of this thematic term loses force. In many Indo-European dialects derivatives of this root acquired the meaning "weight" (originally "weight that an equid can bear").

³⁵² On the age of the noun and its morphology see: Vine 1993, 122-125; Meid 1994 (late Indo-European or post-Indo-European according to Meid).

³⁵³ Mažiulis 1988, II, 160; Eckert 1995, 51-65.

Italic (Latin *uehō*, Umbrian *aṛveitu* “*aduehitō*”, *kuveitu* “*conuehitō*”). The root in this meaning has been discovered in Hieroglyphic Luwian *wiza-* “drive”.³⁵⁴

Thus the distribution of the verb and its nominal derivations is the same as that of the second term; the area includes both Tocharian and Southern Anatolian, but not Northern Anatolian (at least in this meaning).

A *fourth* name for the wheel/ chariot is shared by Indo-Iranian (Old Indian *rātha-*, Avestan *raθa* “military chariot; carriage”, Middle Persian Turfan rhy “chariot”, Old Persian *u-raθa-* “having good chariots”, Sogdian *rδδ-*, Khotanese Saka *raha* “chariot”, Ossetic *raetaen-ağd* “thill < thigh of a cart”³⁵⁵), Italic and Celtic (Latin *rota* “wheel”, Old Irish *roth*), Western Germanic (Old High German *rad*) and Eastern Baltic (Lithuanian *rātas* “wheel”, plural *rātai* “wheeled chariot”, *dvi-rātis* “two-wheeled vehicle” = Latin *bi-rotus*, which seems to be a synonym of a similar and probably more archaic compound with **k^wel-* preserved in Latvian, see above). The word (like the two previous items) is a deverbative noun (cf. the verb reflected in Lithuanian *ritu* “I turn around”, Old Irish *rethim* “I am running”).³⁵⁶

Comparing these data one may suggest several major stages in the development of Indo-European wheeled transport. First, all the terms belong to the period when the dialectal dispersal had already started (probably early III mil. B.C.). The oldest term common to Anatolian (Hittite and Luwian) and Tocharian has links to Northern Caucasian and Hurrian terminology. Connections (still disputable) both to the Northern Caucasian and Kartvelian terms were also suspected with respect to another word related to the harness, which belongs to this earlier period when Hittite had not yet separated from the rest of the dialects including Eastern Indo-European,

³⁵⁴ Meriggi 1962, 147 (with an antiquated reading of the phonetic sign for the initial syllable); Starke 1990, 308, n.1055, 314, 509, n.1874. Since the voiced aspirated palatal disappeared in Luwian, the *-z(z)-* morph should be traced back to the sigmatic suffix **-sk-*.

³⁵⁵ See Abaev 1973, II, 383 on a possible trace in Scythian.

³⁵⁶ A participial element in Latin *rotundus* may be a trace of a verb that had disappeared: Ernout and Meillet 1994, 578. B. Vine reminds me of the possible identity of the *-H-* in Latin *rota* < **rot-tH₂* and of the element reflected in the voiceless aspirated stop in Indo-Iranian **rót-tH₂-o-*.

particularly the Old Indian dialect continued in Vedic. It is the name for one of the crucial elements of the new type of chariot-yoke. The widely spread stem is of the thematic type in *-o- : Hittite *yukan*; Vedic *yugám* "yoke", Nuristani *Prasun yū*, *tiyū* "plough"³⁵⁷; Eastern Iranian *Yazguliām yoy* "yoke", Shugni *yuy*, Mundzhan *yōgh/yīg*³⁵⁸; Armenian *lowc*³⁵⁹; Greek *ζυγόν* "yoke"; Old Church Slavonic *igo*; Old Icelandic *ok* "yoke", Gothic *yuk* "pair", Latin *iugum*; Lithuanian *jūngas*, with reshaping of the noun under the influence of a verbal nasal infix stem similar to Old Irish *cu-ing-* < **com-jung-os*, Old Indian *a-yuñg-as* "unpaired". As with some other words in the same semantic field with a clear inner form due to the connection to a primary verb (see above on derivatives from **weǵh-* "drive"), there are several other nominal stems with partly synonymous meanings. A stem in *-s- is attested in Mycenaean Greek (Dative plural *ze-u-ke-si* "for pairs", also with a derived -u- stem: *ze-u-ke-u-si* "for those who are in charge of the harness", cf. the unexplained -u- in Gothic *jukuzi*), Latin (*iūgus*) and Slavic (**iž-es-e*); a comparison to the Hittite form *i-ú-ga-aš-ša* "yearling" seems possible³⁶⁰ (the metaphorical temporal development of the main technical meaning of the root is shared by all the ancient dialects as well as its application to different kinds of couples and pairs). In Old Indian (*sa-yuj-*), Greek (*σύν-ζυξ*) and Latin (*con-iux* "spouse; husband or wife") archaic compounds, the athematic

³⁵⁷ In general the diffusion of the plough studied by Vavilov and Haudricourt (Haudricourt and Delamarre 1986; Haudricourt 1987) is connected to that of the wheeled chariot, and many terms are transferred from one field into the other; the details and some special cases are to be discussed separately; for Eastern Iranian see: Steblin-Kamenskij 1985 with references. In the literature on comparative Indo-European symbolic anthropology the problem has been discussed in connection with the role of "the plough with a yoke" among Scythian symbols, Benveniste 1938; Dumézil 1978; Xazanov 1975; Raevskij 1977; 1985, 27.

³⁵⁸ Andreev a.o. 1957, 366; Griunberg 1972, 392 (*yax* in the text on reaping, 168, sentence 5); Steblin-Kamenskij 1985, 161.

³⁵⁹ The initial *l-* < **j-* in the Armenian form, apparently influenced by Northern Caucasian laterals (for other internal Armenian explanations see references in Lehmann 1986, 212, J 12), is particularly interesting for comparison to those Northeastern Caucasian forms of the word with the same meaning that have an initial *r-*.

³⁶⁰ But cf. Puhvel 1984, 497-499.

nominal stems have been preserved (in a derived social meaning that should be reconstructed for the proto-language). The verb from which all these nominal stems have been derived is present in all the main groups of dialects (on Hittite see below) with an old set of different types of conjugation (nasal stems, sigmatic stem and mediopassive stem in *-dh- etc.): Old Indian *yuj-/yu-na-k-ti*; Nuristani *Prasun ūpə-*, Imperative *yūpu* "to prepare", Kati *yipō*³⁶¹, Waigali *yūpoy*, Avestan *yaog-*; Greek *ζεύγνυμι*, Latin *iungō*, Lithuanian *jūngiu*. The network of archaic semantic and grammatical connections makes it evident that the name for yoke belonged among the older elements of the Proto-Indo-European language.

The Indo-European terms for yoke resemble Northeastern Caucasian words with the same meaning: Nakh **duq* "yoke" > Chechen *duq*, Avar-Andi **ruλ:V* "yoke" > Avar *ruλ:*; Lezghian **ʔārλ:w* "yoke" > Tabassaran *jurk:-aR*, Tsakhur *ok*, Kryz *uk-ar*, Khinalug *ing* "yoke", Western Caucasian **b(ə)ʔə* "yoke" > Kabardian *bžə* "yoke", on the basis of which North Caucasian **ʔrəgwĕ* "yoke" is reconstructed, different from **rikwV* "yoke stick" seen to be reflected in Lak *ruk* "yoke", Dargwa *duk* "yoke".³⁶² The forms of concrete languages that may be explained by later multichannel borrowing are particularly similar. As the date of the invention of the yoke is much closer to us than the dispersal of Proto-Northern Caucasian and even of the Proto-Northeastern branch, there is no use in discussing the relationship of protoforms, which might be a scholarly illusion. The word might have been borrowed several times, as is clear for Tabassaran *uRin* "yoke for two oxen" and some other later borrowings.³⁶³ The main source of borrowing seems to be different Indo-European dialects, particularly of the Eastern group: Iranian and Armenian, probably Greek as

³⁶¹ The Nuristani and Dardic forms were based on the analogical reshaping *yujjati* > **yujjai* > *yuppai* "is joined, is fitting = is made ready"; the Waigali form may have been borrowed from Dardic Pashai: Turner 1989, 607. This case is methodologically important as it shows that the value of Nuristani linguistic forms for historical studies should not be overestimated.

³⁶² Nikolayev and Starostin 1994, 220, 954; Starostin 1985, 80.

³⁶³ Nikolayev and Starostin 1994, 220-221.

well. Northeastern Caucasian (particularly Avar-Andi, Lak and Darwa) names for the yoke with the initial *r*- may be directly compared with later Eastern Iranian forms like Vakhani rig "two plaits made of twisted twigs that fasten a thill to a yoke"³⁶⁴, Rushan, Huf, Bartang rayāg < *fra-yuga "twisted twigs that fasten a thill to a yoke", Avestan frā-yaog-, Old Indian pra-yuj- "to yoke". Such words can be considered to be directly and maximally close to the prototypes for similar forms in separate Northern Caucasian languages. A comparable problem may be discussed in connection to the Kartvelian terms: Swan ūywa-, ūywa "yoke", Megrelian ūyu-, Laz ūyu, Georgian ūyel-γ "yoke" are supposed to be relatively later borrowings from Iranian.³⁶⁵ In that case, despite objections by Klimov, it might be possible to compare to the type of Georgian ūyleul-, Megrelian ūyul- "pair, yoke of oxen" such dialectal Indo-European forms as Old Indian yugala- "pair, couple" (attested in the *Pañcatantra*), Pali yugala- "pair", Dardic Khowār juwalu "couple (usually of humans)", Marāthī jūval "pair of twins, pair"; Mundzhan ghūwela "twisted twigs that fasten a thill to a yoke", Yidga ghūelo "yoke-rope" < *yūyelo, archaic Greek (Homeric) ζεύγλη "yoke-cushion, between neck and yoke"³⁶⁶; Latin iugulum "throat < *joint", Iugula, the name of a star and a constellation. The Semitic facts constitute the greatest difficulty regarding the intersection of several language families in connection to the name for yoke. But if Illich-Svitych was right in connecting the Indo-European term to the Semitic name for shackles, fetters (Akkadian allu/illi/ullu, 'll "chains, shackles", Hebrew 'ol, Canaanite hullu³⁶⁷), then all the important linguistic groups of this part of the Ancient Near East participated in transmitting the word.

³⁶⁴ Griunberg and Steblin-Kamenskij 1976, 438, 274, fig. 1-6, 161, block 3; Steblin-Kamenskij 1985, 160.

³⁶⁵ Klimov 1994, 68-72.

³⁶⁶ Steblin-Kamenskij 1985, 160 (see also 163 on the type of Tadzhi dialectal yuyol < *y(a)uga-dāra-); Griunberg 1972, 304; Chantraine 1990, 398 (with references).

³⁶⁷ Illich-Svitych 1965, 364-365. Klimov 1994, 70, strongly opposes the suggestion. Nikolayev and Starostin (1994, 220) accept links between Semitic, Kartvelian and Indo-European, but refuse to consider Indo-European influence on Northern Caucasian.

The history of the word for yoke is particularly important for the whole semantic field, the most important parts of which came from Indo-European into the other groups, although the technological and linguistic exchange and interborrowing was so active that it would be a simplification to search for only one direction.

Besides the names for the chariot (*ḫuluganni*), the wheel (*ḫurki*) and yoke (*iukan*) in Hittite, three more terms are known which can help reconstruct terminology of wheeled transport. The Hittite name for the thill *ḫišša* is identical to Old Indian Vedic *iṣā* "pole of carriage or plough" (*ekeṣa* "having one pole"), Pali and Prakrit *iṣā* "pole of plough"; Avestan *aēša* "plough", Modern Persian *xēš*; Homeric Greek *οἰηκες* (Plural) "yoke-rings, through which the reins passed", *οἰήιον* "tiller, helm, rudder" (with the development of sea-travel meanings typical of Greek and Germanic: Old Icelandic *ār*, Old English *ár*), Slovene *oje*, *ojesa* "thill", Serbian-Croatian *oje*, Czech *oj*, Old Polish *oje*, High Luzhitanian *wojo*, Low Luzhitanian *wójo*, Ukrainian *woje*, Belorussian *ojište* "thill" (Proto-Slavic stem in *-s-*), Lithuanian *iena*, an old Baltic borrowing in Finnish *aisa* < **oisā*. The Hittite verb *turiya-* "to harness, to yoke" is derived from a noun cognate to Old Indian Vedic *dhur* "pole of a car". Since the verb is already used in the oldest Hittite texts (as in the collection of stories about palace officials and in the first variant of the Laws) and the noun had disappeared by that time, the word is important for the chronology of the whole semantic field in Hittite.³⁶⁸ Corresponding terms displayed an extraordinary wealth of additional meanings in Vedic. The whole mythological picture of the universe was expressed through this terminology of wheeled vehicles. As an example, two lines from the *R̥g-Veda* (VII.63.2) may be cited:

samānām cakrām pariāvīrtsan,
yád Etaśó váhati dhūrṣú yuktaḥ

³⁶⁸ On a possible correspondence in the Cuneiform Luwian noun *turin*, see above.

...desiring to *revolve* hither the universal *wheel*,
which *Etaśa*, yoked to the *pole*, *draws*

As another similar example, one can also cite the combination *ṛtāsya ... dhurī* "by the pole of the Universal Law" (*Ṛg-Veda* III.6.6 a.o.). In later Brahmanic texts *dhur* as a symbolic yoke becomes the main object of veneration.³⁶⁹

To the Indo-European terms connected to vehicles one can possibly also trace back Hittite *išmeri-* "bridle", mentioned above in connection to the ritual and social use of the term. Its phonetic interpretation and etymology is disputable: although the Hittite ritual use does not contradict comparison to Palaic (also Northern Anatolian as Hittite) *šameri-*, used as an epithet of the chief god *Zaparwa*³⁷⁰, nevertheless the meaning of the latter is not clear. But the heteroclitc alternation of an archaic suffix *-ri* and *-n-* in *išmanala-* "eqerry, groom" makes the ancient type of the noun evident. A comparison to Homeric Greek *ἵμῶς*/Genitive *ἱμῶντος* "reins; halter; leather strap or thong in which the chariot-box was hung" is possible only if the initial *i-* is not added as a purely orthographic device. The Greek term is also comparable to another Hittite word *išḫimana-* "rope, cord".³⁷¹ The latter is derived from the verbal stem *išḫiya-* < *sH₂-yo-, for which a special meaning "to bind a horse" may be reconstructed: cf. Avestan *hita-* "horses yoked together", *Hit-aspa-* (mythological proper name).³⁷²

The next stage after the separation of Northern Anatolian includes Southern Anatolian (Luwian), Tocharian, all the Eastern Indo-European languages, as well as (in another non-reduplicated variant of the second term for the wheeled vehicle) Balto-Slavic, Germanic and Celtic. All these areas are covered by the second and third terms

³⁶⁹ See the text of the *Śatapatha Brāhmaṇa* analyzed in connection with the problem of the yoke as a sacred symbol in Indo-Iranian traditions in Dumézil 1978, 177, n.4.

³⁷⁰ Melchert 1994, 155; on different Greek words compared to this Hittite term, see: Gamkrelidze and Ivanov 1984/1995, 626; Puhvel 1984, 429. Comparison to *μήρινθος* "cord" does not seem well chosen, since the suffix points to a foreign origin for the word.

³⁷¹ Watkins 1995, 454-455, 457.

³⁷² Bartholomae 1979, 813; Ivanov 1981, 165; Haudry 1978, 205, 260, 427.

for wheel/chariot discussed above. These two isoglosses that are approximately identical enabled the suggestion of such a variation of the Indo-Hittite hypothesis in which, after the separation of Hittite (Northern Anatolian), the Southern Anatolian dialect developed still united with the other groups.

In the following period Luwian and Tocharian do not participate in the isoglosses, but Greek still does. Such distribution is characteristic of the term for axle, having different stems formed from the same root: a thematic stem in *-o- in Indo-Iranian (Old Indian *akṣa-*, Avestan *aša-*), archaic heteroclitlic stems in *-en-/on- in Greek and Germanic (Mycenaean Greek *a-ko-so-ne* = ἄξονες, plural, Homeric ἄξων, Old High German *ahsa*), -i- in Balto-Slavic and Italic (Old Prussian *assis*, Lithuanian *ašis/ešis*³⁷³, Slavic **osī*, Latin *axis*), -l- in Italic (Latin *ala*). An old type of compound is represented by the Greek compound ἄμ-αξ-α "four-wheeled wagon; Big Dipper". In Greek tradition the term for axle was used in a cosmological description similar to the Vedic one cited above. The relatively late age of the noun can be inferred from its phonemic shape since the root contains the vowel **ā*.³⁷⁴

The same phonological feature characterizes the term that was one of the main Mycenaean terms for parts of the harness: *a-mo* (cf. Homeric ἄρμα "chariot"), dual *a-mo-te*, plural *a-mo-ta* (cf. Homeric ἄρματα "chariots"), referring to parts of the vehicle (wheels or axles/frames of chariots³⁷⁵). The main terms connected to the construction of chariots are derived from this stem in Mycenaean Greek: *a-mo-te-wo* = **ἄρμοτῆφος* "of a cartwright (?)" (Genitive), *a-mo-te-wi-jo* "decorated by cartwrights (?)", *a-mo-te-jo-na-de* = **ἄρμοτειώναδε* "towards the workshop of cartwrights (?)"; the full work done over a chariot or lack thereof is described respectively by *a-ra-ro-mo-te-me-na* = **ἄραρμοτμένα* / *a-na-mo-to* = **ἀναρμό(σ)τοι*. The exact semantic

³⁷³ Secondary dialectal development: Andersen 1996, 26, 57; on Baltic words see: Mažiulis 1988, 105; Eckert 1995, 54.

³⁷⁴ On the specific position of this phoneme, see Gamkrelidze and Ivanov 1984/1995 with references.

³⁷⁵ Lejeune 1968; Chantaine 1990, 111.

correspondence to Old Indian Vedic compounds *á-riṣ-ta-ratha* "(whose) cart (is) non-damaged" (as well as the combination *á-riṣ-ta-s ratha-s* "non-damaged chariot" in the *Ṛg-Veda*, cf. Avestan *a-irišta-* "non-damaged"), *á-riṣ-ta-nemi* "having a non-damaged rim" (*áriṣtanemim rátham* "a chariot with non-damaged = whole rims of wheels") makes it possible to suggest a common Eastern Indo-European prototype of such privative constructions at the level of meaning. Close semantic correspondences to this Greek term are found in Slavic (**jarāmo* "yoke with a thill for two oxen", with unexplained length of **ā*). In Ossetic *ar* "thill", possibly in some other dialects as well³⁷⁶, the stem was often contaminated with a term for "arm".

Among specific Indo-Iranian-Greek (or maybe Proto-Eastern Indo-European) innovative terms, one can mention Old Indian *śamya-* "yoke pin" (in the *Śatapatha Brāhmaṇa*), Lahndā *sam* "horizontal stick of a yoke which passes under a bullock's neck", Avestan *simā* < **sami-* "wooden ring around the neck of a horse attached to a yoke", Mundzhan *sām* "yoke-peg needed to immobilize the neck of an ox", Vakhan *sam(šúng)* "vertical pegs on the yoke", *samdarč* "a rope binding together the vertical pegs on the yoke", *sən-vər* "yoke" < **sami-bara-*, Ossetic *saemaen* "axle".³⁷⁷ The term is cognate to Greek *κάμυξ* which, besides a general technical meaning "pole" ("vine-pole, vine-prop", Σ 563), also has a special nautical sense of "tiller, helm", coinciding with one of the main meanings of Armenian *sami-k'* "yoke pin; tiller, helm". Although it has been supposed that the latter might have been an Iranian (Parthian) loanword in Armenian³⁷⁸, the parallel nautical meaning in Greek (characteristic of the

³⁷⁶ On Eastern Baltic (Lithuanian and Latvian) terms which are considered to be later borrowings from German, see: Toporov 1980, 69 (cf. there also on Gaulish). Cf. also below on Old Indian *arā-* "spoke of a wheel", which may be connected to the same root.

³⁷⁷ Abaev 1979, III, 64-65; Griunberg 1972, 168, 353; Griunberg and Steblin-Kamenskij 1976, 161, text on agriculture, sentence 3, 274, fig. 1, 445; Steblin-Kamenskij 1985, 161-163.

³⁷⁸ Benveniste 1964, but cf. Dzhaugian 1982, 136.

other Greek terms in this semantic field) may point to an earlier Eastern Indo-European transport term.

The next stage seen in the fourth term for wheel/chariot is marked by the absence of Greek and by the beginning of the dialectal dispersal of some groups like Balto-Slavic (with clear Eastern Baltic innovation opposed to an archaism preserved in Western Baltic and Slavic as marginal dialects). To this period the name for hub may belong: Old Indian Vedic *nābhi* "nave of a wheel; navel", *nābhyam* "nave of a wheel", Sinhalese *saknāba* "hub" < **cakra-nābhi* "nave of a wheel", Old Prussian *nabis* "nave of a wheel, navel", Old English *nafu, nafa* "hub of a wheel" (*nafogar* "auger" < **nabō-gaizaz* "tool for piercing wheel hubs"), Old Icelandic *noḟ*, Old High German *naba* (the transfer of the names for parts of the body to denote parts of the wheel or carriage is characteristic of different Indo-European traditions, see above on Ossetic³⁷⁹). Greek has another term probably derived from **k^wel*-(H)- (see above on Mycenaean *qe-re-me-ne-u*). Dialects that do not participate in the isoglosses of this chronological level have their own original words. An interesting "Scythian-European" dialectal term that spread in Eastern Iranian, Albanian, Balto-Slavic and Germanic may be seen in Ossetic *fsondz* "yoke" (*fs-* < **sf-* < **sp-*), Albanian *pende* "pair of yoked oxen", Latvian *spanda* "a rope to bind a plough to the yoke", Old High German *spannan* "to stretch" (German *Ge-spann* "team, couple"), Old English *spinel* "spindle".³⁸⁰ Ossetic *stf/evdz(ae)* "vertical pivot connecting a yoke to the thill" is supposed to have entered a similar isogloss, since comparable technical terms are found in Baltic, Slavic (Russian *spica* "spoke"), Germanic and Latin³⁸¹, but only some of these words are specialized in meanings related to vehicles.

³⁷⁹ Abaev 1973, II, 149, suggested that the Indo-European term for "navel" had been borrowed into Western Caucasian, but for a different explanation of these words see: Nikolayev and Starostin 1994, 306. On Old Prussian as an archaism cf. Eckert 1995, 53.

³⁸⁰ Abaev 1958, I, 485; 1965, 9-11; Delamarre 1984, 123.

³⁸¹ Abaev 1979, III, 152; Delamarre, *ib.*

To the period of separate dialectal migrations of some Western Indo-European dialects belong such local isoglosses as the word common to Italic (Latin *currus*) and Celtic (Old Irish *carr*, Gaulish *carros* > Latin *carrus* "four-wheeled chariot") but known also to a certain *satəm* dialect (probably of a Paleobalkanic Thracian or Southern Anatolian type) from which the gloss $\sigma\acute{\alpha}\rho\sigma\alpha\iota$ $\acute{\alpha}\mu\alpha\zeta\alpha\iota$ derives.³⁸²

The appearance of the fifth name for vehicle/road *we/ort-on-* (> Avestan *vāša* "vehicle", Western Iranian Parthian *wardyūn* "chariot; vehicle", Eastern Iranian Sogdian *wrtñ* "chariot", Ossetic *waerdon* "cart", Mesopotamian Aryan *wartanna* "circular track for training horses")³⁸³ could be assigned to a period of the separate development of Indo-Iranian. The term from the ancient Alan dialect was borrowed into Nakh (Chechen *varda[n]*, Ingush *vorda* "cart"), Lak (*warda* "two-wheeled cart") and Abkhaz-Abaza (Abkhaz *a-wardən* "cart", Abaza *wandər* < *wardən* "cart").³⁸⁴ Some of the Indo-Aryan terms, correspondences to which in the other dialects are not clear, may be considered either innovations of the last period or archaic survivals (e.g. Old Indian Vedic *arā-* "spoke of a wheel", Panjabi *ar* "one of the crosspieces in a cart-wheel", Oriya *ara* "felloe of a wheel"³⁸⁵).

Among verbs related to vehicles and horses, the prototype of Old Indian Vedic *abhi dhā-* "to harness, to yoke", *abhidhānī-* "halter", Avestan *zaranyō.aiwiδāna* "having a golden rein" (in a long series of epithets for a horse: Yt. VIII. 18) – cf. Ossetic

³⁸² Porzig 1954; Ernout and Meillet 1994, 102, 160.

³⁸³ Abaev 1989, IV, 92; Gamkrelidze and Ivanov 1984/1995, 465, 623.

³⁸⁴ Abaev unpublished, 335-336; 1989, IV, 92. As Abaev has suggested, the borrowing of these terms shows that wheeled vehicles were introduced into the Caucasus by Alanian invaders. This fact demonstrates that the borrowing of another term for "wheel/wheeled chariot" (possibly of another more archaic type) cognate to Hittite *hurki-* "wheel", which went in the opposite direction, should have occurred before the speakers of Proto-Northern Caucasian had come to the Caucasus from more Southern areas (according to Starostin's suggestion, see above). To a much later period belong such Northern Caucasian borrowings in Ossetic as *g.yffae* "body of a cart" from Kabardinian *gufā* "thill", Abaev 1958, I, 529.

³⁸⁵ This term, which enters some widely spread compounds (Old Indian *araghatta-* "wheel for raising water", *nemiyāra-* "felloe-spoke"), might originally have had some connection to the stem of Ossetic *ar* "thill" (see above).

zaerīn + (w)idōn/jidōnāe “rein(s)”, widadz “bridle”; Khotanese Saka byāna- “rein”, Pamirian Sarykol wiḡān, Yidga awlān “rein”³⁸⁶—can be referred to Proto-Indo-Iranian.

An important innovation in this semantic field in Iranian languages is a general term for horseback riding: Avestan *bar-* “to ride horseback”³⁸⁷, Old Persian *asa-bāra-* “rider”³⁸⁸, Middle Persian Pahlavi *asaβārān* “riders”³⁸⁹, Modern Persian *suvar* < *asvār*, Eastern Iranian Khotanese Saka *ásśa-bāra-* “rider”, Sogdian *β’rk* “rider”, Yagnobi *vóra* “rider; horseback”³⁹⁰, Ossetic *baraeg* “rider”. In Shugni-Iazguliam and Ishkashim Pamirian languages a new name for horse is derived from this stem: **bāraka* > Shugni *vorj* “horse”, Iazguliam *varāg*, Ishkashim *vərōk* “horse”, Sarykol *vərōk*, vorak, Rushan *vūrj* “horse”, Ossetic *bairag* “foal”, cf. in Western Iranian Pahlavi *bārak*, Modern Persian *bāragī* “horse”.³⁹¹ In the ancient Alanic (Scythian) dialect the

³⁸⁶ Bartholomae 1979, Reichelt 1978, 395, 503; Abaev 1989, IV, 107 (with a discussion on the phonetically irregular correspondence of the closely related Avestan and Ossetic terms).

³⁸⁷ Bartholomae 1979, 936, meaning 8, n.14 (from **bhur-* “to move quickly”, attested in this original function in Sanskrit).

³⁸⁸ Kossowicz 1872, 12; Bartholomae 1979, 219, add. 121

³⁸⁹ Perixanjan 1973, 440; 1983, 17. On the borrowing of Persian *asbār-* in other medieval Iranian and Middle Indo-Aryan documents, see: Livshic 1969, 66, n.95 (with references); Steblin-Kamenskij 1981, 323; cf. Lukonin 1987, 242, n.48.

³⁹⁰ Andreev a.o. 1957, 346. The typical Yagnobi expression corresponds to the parts of the Old Iranian compound: *aspē vóra* “horseback” (ib., 15, N1, sentence 75; 101, N17, sentence 10; 139, N28, sentence 29; 144, N28, sentences 68 and 77; 154, N31, sentence 32; 193, N43, sentence 15; 196, N44, sentence 10 a.o.). The phrase *vóra vunáy-t vóra vu* “you sit down on what you are going to sit” is used as a euphemism when the name of a horse is avoided (ib., 346); cf. in the Yagnobi secret language *rūbēdūyma* “horse = broom-tail” (in a folk narrative: *rūbēdūymōte rītīs pārtowt* “throw him to the horses”, ib., 315 with parallel names for animals in the other Pamirian languages), the Tadjik (Persian)-Yagnobi secret name for the horse *dym-zīr* “horse = tail-broom” (Xromov 1972, 167, without interpretation); although the order of the elements is different, the Iranian word for *tail* is present in both the “secret” (taboo) compounds, cf. the combination of this noun (Yagnobi *dūym*, *dum*, Sogdian *ḡwnph* = “*ḡumb* “tail”, *ḡwnp’k* = “*ḡumbāk* “having a tail”, Benveniste 1929, 94) with the name for horse in a number of stories: Andreev a.o. 1957, 88, N 10, sentence 26 (*āspē dúmesint*), 94, N 14, sentence 43 (*āspē dúmē*), 189, N 41, sentence 71; 206, N 44, sentence 65 (*aspa dúymēs*).

³⁹¹ Morgenstierne 1974, 85–86; Abaev 1958, I, 232, 237; Sokolova 1953, 202, Yazguliam text 1, sentence 27; 1973, 13; Andreev a.o. 1957, 346.

names Anbal (known in the XII c. A.D. from Old Russian chronicles) and Ἀνπαλαν (attested in Old Alanic Zelenchuk inscriptions of the X-XII c. A.D.) derive from the same stem as does Modern Ossetic *aem-bal* "companion", cf. also *bal* < **bār-ya-* "a group, detachment, gang" < *detachment of riders", *balc* "travel, trip; military excursion (in the traditional folk epics)" < **bār-ti*, *bal-xon* "leader".³⁹² As Nikolayev and Starostin have suggested, Alanic (Scythian) **bal-ti-* was borrowed into Lak (*burtij* "on horseback", *burtijhu* "rider", Proto-Darwa **murta*: "rider" > Akushi dialect *murda*, Chirag dialect *mart:a*). It is also supposed that the name for horse in Avar-Andi (**bar-ti* > Avar *bārti* "stallion"), Lak (*balčan* "horse"), Darwa (cf. Akushi *bartken* "deer" with a semantic shift) and Lezghian (*balkan* "horse") are old loanwords from Alanic, as are Chechen *bēri*, Ingush *bāri* "a fine guy, dependable horseman".³⁹³ This etymology suggests that horseback riding (probably of a more sophisticated kind) was introduced into the Caucasus by Alanic invaders, as was at least one type of wheeled vehicle. The term for this type of transport had been an Iranian innovation. Corresponding Indo-Aryan words with the meaning "horseman, rider, groom" were borrowed from Middle Iranian into Indo-Aryan at a relatively late period: Prakrit *āsa-vāra-*; Lahndā *haswār*, Pānjābi, Gujarātī, Marāṭhī *asvār*, Hindi and Kumauni *aswār*, Oriyā *asuāra*, Old Mārhwārī *asavāra*. Some of them were changed in a sort of accommodation to Indo-Aryan forms: Sanskrit *aśvavāra-* "horseman, groom" (first

³⁹² Abaev unpublished, 42, 57, 262, 266; 1958, I, 135, 232-234.

³⁹³ Abaev 1958, I, 237; Nikolayev and Starostin 1994, 285. Alan-Chechen connections were first studied by Abaev in his important work of the early 1950's, prohibited by official censorship and never published: Abaev unpublished. Among other words, Abaev suggested that Ossetic *rox* "bridle, reins" was borrowed into Chechen *urx* (Plural *arxaš*), Ingush *urx*: Abaev 1973, III, 422. Nikolayev and Starostin (1994, 234-235) suggest a proto-Northern Caucasian stem **xwiri* "bridle, reins" (see above on a problematic link to the Urartian term). In that case this Ossetic word (probably as was an enigmatic folkloric name for a precious bridle *xaerx*, Abaev 1979, IV, 182; 1958, I, 193, see as a Dargwa parallel *Urakhi hurhur* "bridle") was borrowed from Nakh (or another Northeastern Caucasian language), as was Ossetic *baex* "horse": it comes from Nakh **baqe* "foal" > Chechen *beqa*, Ingush *baq*: Abaev 1958, 256; Nikolayev and Starostin 1994, 1049.

attested in the *Śiśupālavadhā*); Niya Kharoshti Prakrit *aśpa-vara-*, Kashmiri *aṣṭwār*.³⁹⁴ Only some Indo-Aryan dialects have a trace of another compound derived from the combination of the Indo-Aryan term for horse with the term for rider (Prakrit and Pali *ārōha*, cf. Niya Kharoshti Prakrit *arohag'a* "saddle (?)": Sanskrit *aśvāroha* "rider" (*Kathāsaritsaṅgā*), Pali *assāroha* "horseman", Sinhalese *asaruvā*.³⁹⁵

The Ossetic words concerning vehicles (discussed above: *calx* "wheel", *raetaen-aḡd* "thill", *ar* "pole in a cart; thill", *saemaen* "axle", *fsondz* "yoke", *waerdon* "cart"³⁹⁶) belong to different chronological strata of Indo-European dialectal vocabulary. In this they differ radically from the lexical group of words concerning horseback riding, most of which belong to the Iranian layer or entered the language much later: *-tong* in compounds like *aex-tong* "strap, belt, thong serving as a support", *dymi-tong* "tail belt"³⁹⁷, cognate with Afghan *ta-tang*, Persian *tang*, Kurdish *tang* "strap"; a compound *aēḡd-yncoj* "stirrup" (with the same first element as the second one in the Ossetic compound word for thill discussed above + *aencoj* "to support", from a preverb-verb combination **ham-č[y]āna-*); *zḡaellagkom* "bits" (a compound with an inner semantic form "metal + mouth", for which parallels exist in many linguistic traditions of Central Asia, including Yenisseyan and Tibetan); a verbal derivative *aeftawgae* "horse-cloth" (from *aeftawyn* "throw over, to tie horses to"); (j)aexs(ae) "whip, lash" with unclear etymology; some of the terms are borrowed as *sarḡ* "saddle" (from Arabic), *dū/og* "(funerary) horseraces" (perhaps from Turk).³⁹⁸ The study of this group

³⁹⁴ Turner 1989, 41, N926.

³⁹⁵ *Ib.*, 41, N929, 60, N1333 with further references.

³⁹⁶ The terms for the rein (*widon*, *widadz*) occupy a specific place, since a corresponding term in the *Ṛg-Veda* refers to a horse being yoked onto a chariot, and beginning with the *Avesta* the Iranian terms refer to horse-riding.

³⁹⁷ On Eastern Iranian terms for the tail of a horse, see above in connection with the Yagnobi secret names for the horse. On the second part of these Ossetic terms, see: Abaev 1958, I, 222-223, 382. Although the stem **twengh-* "to press in on" seems to be old (Pokorny 1959, 1099; Watkins 1985, 72), its use with respect to the horse is an Iranian innovation.

³⁹⁸ On these words, see: Abaev 1958, I, 122-123; 1989, IV, 308; 1958, I, 114-115; 564; 1979, III, 34-35; 1958, I, 373-374.

of terms throws light on the chronology of the development of horseback riding. It appeared early in the history of Iranian dialects after their separation from Indo-Aryan and other Aryan groups. Some general terms (such as *sed- "to sit") acquired in Iranian a specialized meaning connected to riding a donkey (Bactrian $\alpha\rho\omicron\beta\alpha\lambda\alpha\nu\omicron$ with a possible meaning "sitting on a donkey"³⁹⁹) or horse, but this meaning cannot be reconstructed for Proto-Indo-European. This conclusion is corroborated by the data from other Indo-European dialects. Only some of them (such as Baltic, Germanic and Celtic) have terms specialized for horseback riding, but they derive from the terminology of movement particularly connected with vehicles, cf. for instance Lithuanian *jóti* "ride horseback" cognate with Hittite *iya-* "move by vehicle".⁴⁰⁰ A recent suggestion concerning the Proto-Indo-European form reflected in Latin *eques* "cavalryman = knight (a social status); horse" = Homeric Greek $\iota\pi\pi\acute{o}\tau\alpha$ "horseman, knight" as an Indo-European word for horseback rider⁴⁰¹ still relies on the relatively late development of the individual dialects. Judging from the linguistic data, one should conclude that, if horseback riding really began at the turn of the IV mil. B.C. before the dispersal of Proto-Indo-European, it did not leave traces in the vocabulary of the later dialects: the older terms connected with horseback riding were not specific or may have been ousted by later terminology. Thus it cannot be proven that this type of ancient (probably quite primitive) horseback riding had originally been connected with Indo-Europeans. Since archaeological traces of horse riding, at least in its rudimentary form, become numerous in Northern Kazakhstan in the second half of

³⁹⁹ Livshic 1969, 60, with references on comparable Iranian (Scythian and Ossetic) terms; Steblin-Kamenskij 1981, 323-324.

⁴⁰⁰ Gamkrelidze and Ivanov 1984/1995, I, 627. The main data have already been collected in Buck 1988, 714-715 (meaning *a*, mostly denoted by verbs derived from the name for horse). Some of the verbs that Buck gives with meaning *a* ("to ride horseback") are found in the most ancient languages under meaning *b* ("to move in a vehicle").

⁴⁰¹ Meid 1994; cf. Adams, Mallory and Miller 1997, 277. It seems worth noting that a comparable suffix can be seen in Cuneiform Luwian *a-aš-šu-u-ut-ti* (KUB XXXV 100 Rs. 3, Starke 1985, 408; 1995, 118, n.236); according to an old suggestion by Sturtevant (recently discussed again by Schmalstieg) the sign *-u-* might have a phonetic value [o] as in Hurrian cuneiform writing. Unfortunately, the text is broken, and the meaning of the derivative in Luwian is unclear. A similar suffix *-uti-* can be supposed in Lycian *axuti* "sacrifice" but there it alternates with *-iti-* (see above).

the IV mil. B.C., the Proto-Yeniseyan language is a likely candidate. And so the possible link between Proto-Yeniseyan and Proto-Indo-European terms for horse (see above) is particularly important.

The Indo-European proto-language had a general term for taming or domesticating animals and raping women, from which several dialectal names for oxen are derived⁴⁰²; this might be a sign of a more ancient period. In some traditions, particularly in Homeric Greek, the root (as in ἵππο-δαμος “horse-taming” of the Trojans⁴⁰³) can be applied to the taming of horses, but the linguistic evidence is less promising than with respect to the earlier sphere of cattle-breeding. The acquaintance with the domesticated horse can be considered as roughly contemporaneous with the end of the common Proto-Indo-European period. It seems reasonable to find in the distribution of words connected to this field of activity, particularly the distribution of names for vehicles and their parts, traces of those migrations accomplished by means of these new technological devices.

Among the Hurrian terms related to vehicles and rotary motion, Hurrian tiyari-(t-) “spindle, chariot” seems particularly interesting. The first meaning is attested in the Ras Shamra vocabulary (RŠ quadr. 137 II 22): Hurrian te-a-ri = Sumerian SUM.BAL = Akkadian *PILAKKU* = Ugaritic *pilakku* “spindle”. There are several places in Hurrian rituals where the word ^{GIS}ti-ya-ri-ta can be translated as “spindle” (or something similar), such as in a Boğazköy list of objects where it is mentioned after a ladder; a borrowed Luwian noun probably had the same meaning.⁴⁰⁴ But at two places in the Hittite translation of the Hurrian epic song of Ullikummi, the meaning “military chariot, wheeled vehicle” is evident. A description of a battle includes the lines: 𐎲𐎠𐎵𐎠𐎧𐎠 ^{GIS}ti-ya-ri-da-aš ša-ra-a ga-aš-ga-aš-ti-pal-aš ma-a-an wa-at-ku-ut “the God of Thunder (= Teshop) jumped up on the chariot as when it goes up from the

⁴⁰² Gamkrelidze and Ivanov, ib., 403-4, n.23; 491.

⁴⁰³ Bearing in mind the legend of the Etruscans’ Trojan origins, the Etruscan term δάμνος “horse” (Pallottino 1980, 429) seems intriguing. On the meaning of the Indo-European root, cf. Benveniste 1955; it seems possible that it referred to a more cruel and primitive type of domestication.

⁴⁰⁴ I Bo T II 129 Vs. 5, Haas and Wilhelm 1974, 178; Starke 1990, 219.

royal palace gate" (KUB XXX III 106 21).⁴⁰⁵ In a damaged passage in the beginning of the same description (ib. 3-7), a logographic denotation of a military chariot is used twice in the same context (with the same verbs); after its second use, the word ^{GIS}ti-ya-ri-ta appears before the verb ni-ni-in-ki-iš[ki-iz-zī] "he is winding up", which should refer to the yoke or the horse team.

Hurrian *tiyarit* "spindle, chariot" is cognate with Western Northern Caucasian *t:arədə > Proto-Abkhaz-Tapant *darədə > Abkhaz (a)-dardə "spindle" (Bzyb dialect a-dərdə), Abaza dadər-; the Eastern Northern Caucasian forms (*tiringV "spindle" > Dargwa *duruk > durug, Lezghian *tinug > Archi tung "spindle's pivot"), though comparable to Indo-European *torkw- "spindle"⁴⁰⁶, are definitely far from the Hurrian word. In this rare case, the Hurrian form coincides with the Western Caucasian and not with the Eastern one. The Hurrian and Western Caucasian words (in which the second *-d- might be due to assimilation) may also suggest parallels in Greek τροχός "wheel, potter's wheel", Armenian durgn "potter's wheel", Genitive drgan < *dhrōgh-; Old Irish drogh "wheel".⁴⁰⁷ It seems that when the idea of rotary motion was discovered, its early technological applications, as well as corresponding terms, spread among the Indo-Europeans and their neighbors who spoke Northern Caucasian dialects; the form may show a relatively later dialectal level of borrowing.

⁴⁰⁵ The word for palace gate *kaškaštipa-* (from Hattic, cf. Hattic *aška-* "gate", Ivanov 1985, 43) was written with the wrong sign (-ya- instead of -pa-, which both contain similar parallel horizontal cuneiform lines), probably a scribal error. The whole section dealing with this passage in Starke 1990, 219-220, is wrong, since the meaning of the word is known and is not a hapax. For a text describing the appearance of a royal vehicle (*huluganni-*) coming from the palace gate (*kaškaštipa-*), see: I Bo T 136 I 8, 67; II 26-28; IV 27, Jakob-Rost 1965, 182-184; Ardzinba 1982, 143, 147, 219, n.191; Alp 1983, 106-11. Starke's remark on the chariot of Teshup is correct but should be applied directly to the text (without the unnecessarily complicated metaphorical scheme).

⁴⁰⁶ On this comparison and on Northern Caucasian, see: Starostin 1985, 85-86, 89; Nikolayev and Starostin 1994, 993. According to Abaev 1949, 313; 1989, 65, the Abkhazian word is derived from Ossetic *waerdaert(t)* "a heavy ring put on the spindle to make it stable" < *vartaθra- "rotating instrument" (cf. Yagnobi *watra* "mini-spindle"). If it is an old borrowing in Hurrian like the word for fire (see above), the source should be Proto-Iranian, and the change due to the reshaping of the beginning of the word has to be ascribed to Proto-Western Caucasian, making this hypothesis tenuous.

⁴⁰⁷ On the Indo-European word, see Adams and Mallory 1997, 640-641.

Several terms in Indo-European, partly discussed above, have been reconstructed which refer to the harness and its details.⁴⁰⁸ Many formal difficulties among them are connected with one represented by Mycenaean Greek a-ni-ja, a-ni-ja-pi, a-ni-jo-ko "charioteer, reins-holder", Homeric ἵπτα "reins", ἵπ-οχος "holding the reins, charioteer" (Laconian ἀνιοχ(ον, without aspiration), Middle Irish ē(i)si "reins, bridle", Old Indian nāsyā "bridle passing through a nose" (with probable influence from the word for nose), and are comparable to several technical terms denoting a hook (Old Prussian ansis), a handle (Latin ānsa), perhaps with an original stem in *-m- (> -n-).⁴⁰⁹ If one accepts this reconstruction and considers the meaning connected with the horse harness as primary, a possible Northern Caucasian match could be found in *HxəmV "leather strip, rope, string" (> Nakh *mḥēxV "harness thread", Avar-Andi *ʔinlɔ > Tindi ila "leather rope for donkey tethering", Proto-Tsez-Khvarshi *ʔɔl "leather rope", Lak xumu "rope, string", Western Caucasian *xa "thread in a spindle"⁴¹⁰) on the one hand and in Hurrian himz- "to bind, to tie up" (hi-im-za-at-hu-u-ši = Hittite an-da iš-ḫu-zi-ya-it "girdled"⁴¹¹, K Bo XXXII 13 I-II 10-11) on the other.

6. The Hurrian Voluntative in -l- : an areal feature?

The Hurrian epic text begins with the formula ši-ra-ti-li "I would like to sing", 1st Person Singular Voluntative of the verb šir-ād- "to sing, to narrate"⁴¹² (K Bo XXXII 11

⁴⁰⁸ Gamkrelidze and Ivanov 1984/1995, 621-627; Delamarre 1984, 117-127.

⁴⁰⁹ Toporov 1975, 92-93 (with bibliography); Chantraine 1990, 413; Watkins 1995, 7-8, n.1 (reconstruction *H₂ans-iyə/aH₂).

⁴¹⁰ Nikolayev and Starostin 1994, 623.

⁴¹¹ Neu 1996, 248-249. The Hurrian verb may be linked genetically to Proto-Dargwa *-imx;Vr; on the different variants of the reconstruction, cf.: Starostin 1985, 86; Nikolayev and Starostin 1994, 655. A connection with the Indo-European word for girdle *yōs(-to-) can also be suggested. But the morphonemic relations between all these words seem too complicated, and some of these hypothetical etymologies should perhaps be abandoned.

⁴¹² Neu 1994, 8, 30, 33-34, 38, 41, 257-258; 1988, 243, n.33; the semantic link between Hurrian širi = Hittite kapuwar "enumeration, computation, number" and šir-ād- "to sing = narrate" (cf. Chamalal šal-id- "to read" < *-iḫwEl "to count", Nikolayev and Starostin 1994, 628-629), as in XVI-XVII-century English "(ennobled) numbers" (R. Herrick; *numbers* as opposed to *prose* in Shakespeare) in the meaning

Vs. I 1). Two other similar verbal forms follow: *ta-al-ma-aš-ti-i-li* "I will praise" (ib. I 2-3; derived from the stem of *talmi* "great" by means of the verbal suffix *-ašt-* and *kat-ti-il-li* "I will speak" (ib., I 4 and 7; the stem of the verb *kad-* "speak" in *-il-*). In the next part of the bilingual composition, a Voluntative form based on another stem (in *-ul-*) of the same verb is used: *ka₄-du-ul-li/ka₄-tú-li* "I will add (to this) = I will give you another fable" (ib. I 23-24; 25; 40; IV 7; 8; 21; 33; 34; 53; 54). In the bilingual Hurrian-Hittite text, the modal forms of the other persons in *-l-* with other morphs are also used: *a-me-la-a-an-ni* "let (the fire) burn him" (Optative, with a sequence of two modal elements as in Urartian forms in *-le-ne*; see above on the whole formula in connection with the name for fire), *i-ti-la-an-ni* = Hittite *-ma-na-an wa-la-aḫ-zi* "let (the god Teshop) strike him" (K Bo XXXII 14 I 6-7), Hurrian *sí-ik-ku-ú-ul-li* = Hittite *ma-an... ar-ḫa(-)du-wa-ar-na-at-ta-ri* "let (his arm) be completely broken" (ib., I 47-48 = II 47-48; Rs. 37 = 43-44); Hurrian *e-ḫe-eb-šu-li* = Hittite *...ma-an...ú-i-šu-ri-ya-at-ta-ri* "let it be constricted" (ib., I 48-49 = II 48-49; Rs. 37 = 43-44). Such combinations confirm that in the dialect of the bilingual text, as in other variants of Hurro-Urartian⁴¹³, the marker *-l-* in combinations with other morphs in the same agglutinative chain expressed different modal meanings. Among them, the Voluntative forms of the 1st Person (also known in the Mitannian letter and in other dialects) stand out because of the unusual typology of addressing an order to the self.

Although such forms are typologically unusual, they are encountered at approximately the same time in three different languages belonging to three different families but in cultural contact with each other: Hurrian, Hittite and Akkadian. The morphs expressing this unusual meaning in all three languages contain *-l-* and in

"verses, poems" can be connected with the counting of the number of the verse units; the conscious approach to the structure of a musical and metrical poetic composition may be deduced from the cuneiform notation of a Hurrian song. E. Neu suggests the parallel German Zahl "number": erzählen "to tell a story"; B. Vine adds English *recount*, *tell* "count" (Shakespeare), Modern *bank-teller* and *tell a story*. On the following Voluntative forms and their Hittite correspondences, cf. Neu, ib., 35-36, 37, 105-106, 123-124; 151-152, 154 (with bibliography).

⁴¹³ Xachikian 1985a, 104ff.

general can thus be compared to one another (keeping in mind all the difficulties of comparing grammatical features of languages genetically different from one another or related only in a distant way).

In the bilingual text, the Hittite Iterative forms of the Present Indicative are used as translational equivalents of the Hurrian Voluntative: [kad-ul-li] = Hittite [mem-i-ški-mi] "I shall speak about more things".⁴¹⁴ A corresponding Hittite form of the Voluntative (or 1st Person Singular of the Imperative) of *mema-* (-*hi* conjugation) in the Middle Hittite period is not yet attested (the form *me-ma-al-lu* "I will speak" occurs twice in the prayer of King Muwatalli⁴¹⁵); few forms of the -*hi* conjugation like *ak-kal-lu* "I will die" belong to Middle Hittite. But according to Benveniste's suggestion, accepted by several other scholars, the formation of the Voluntative of the -*mi* conjugation of the type *eš-li-t/eš-lu-t* "I will be" (with a parallel form *aš-all-u*) might be very archaic, since it can correspond to Old Lithuanian *esle*, Slavic **jesti + *li*, Tocharian B *nasāl < *no-es-l-*, A *nesalle*; the protoform for Balto-Slavic is reconstructed as a combination of a particle (Old Prussian *lai*) with a verbal form.⁴¹⁶ In that case, one may simultaneously see in these forms an original Hittite form in -*lu-u-t* (the second element in the agglutinative chain being the usual morph of the Imperative, the third one a mediopassive ending probably *< *-dh-*) and a form similar to the Hurrian voluntative in -*li*. The -*li* (also found in Hittite in isolated modal forms like *dalug-nu-la* "that should be made longer" and in some nominalizations based on verbs) can be

⁴¹⁴ On the meaning of the form in archaic texts: Dressler 1968, 218, 225; Hoffner and Güterbock 1986, 256-263.

⁴¹⁵ KUB XXX 14 III 74; VI 46 IV 42; Hoffner and Güterbock 1986, 254; *mamallu* "I will speak" belongs to Neo-Hittite when the verb had shifted to another class, cf. *tar-aḫ-ḫa-al-lu* "I will overcome", K Bo XII 58 + Vs. 5; the vocalism in *še-ig-gal-lu* "I will know", which should have had old *a < *o* in the Singular, also points to a later date; cf. secondary Neo-Hittite *ú-wi₂-el-lu-ut* "I will see", *pešgellu* "I will give", KUB XXX 14 + III 66, coexisting with *ú-wa-al-lu* "I will see", *ušgallu* "I will see", *pešgallu* "I will give". On the chronology of the forms: Oettinger 1979, 45, 54, 83, 221, 486-487, 200; Melchert 1994, 157.

⁴¹⁶ Toporov 1984, 418-436, with detailed documentation.

compared to the Lydian infinitive in -l and past tense 3rd Person ending -l⁴¹⁷, thus presenting an isogloss uniting Northern Anatolian with Tocharian (modal and past forms in -l), Armenian and Slavic (perfect participle also used in the modal function as in Tocharian), possibly with Italo-Celtic (particularly Umbrian) verbal forms in -l- as well. In Hurro-Urartian, the morph -l- is the mark of several moods in contrast with the Indicative. In Akkadian, the main difference (determined by the general prefixal tendency of Semitic, as opposed to the suffixal one of Hurro-Urartian and Indo-European) lies in the position of the Voluntative morph at the beginning of Akkadian forms like *lukšud* "may I attain" and *lumḥaš* "I want to strike, I will strike". Although the initial l-u- of the Babylonian Precative, as opposed to l-i- and the prefixes a-(e-) and u-, may be described synchronically as a prefix added to the stem of the past tense⁴¹⁸, it is quite plausible, from the point of view of the history of the language, that it originated in a particle like Akkadian -lū (Old Babylonian dialect of Mari *itti šarrim lā innamru* "may he not meet with the king"), Arabic *li* (*li + jaqtula* "so that he may kill").⁴¹⁹ Thus, if the situation in Semitic is to be compared to Indo-European dialects, the closest match will be found in Balto-Slavic, where the origin of a verbal word form from a combination with a particle is also evident. The other dialects (such as Hittite) as well as Hurro-Urartian show the word form already made. But it seems possible to suppose that in all three groups of languages, the initial stage was similar to that in Semitic and Balto-Slavic. Volition could be expressed by a combination with the particle. When (due to some common features of cultural and psychological development) the need for a form expressing this mode arose, the three languages chose a similar way, perhaps borrowing the particle from one of them from which the stimulus for this development had come. The borrowing of particles is not unusual (as

⁴¹⁷ Rosenkranz 1978, 134; Meriggi 1980, 346, §217-219; Melchert 1994, 341-342, 363, 379 (with further references). According to Illich-Svitych 1976, 20-21 (N 253), this type of verbal adjective can be traced back to Nostratic and in that case is an archaism in these Indo-European dialects. For *dalugnula*, see further the author's "Old Novgorodian Nevide..." (this volume) on *parganula* (with n.17).

⁴¹⁸ Riemschneider 1973, 124, §18.8.

⁴¹⁹ Gelb 1969, 100.

opposed to the borrowing of grammatical morphs, a rare event possible for the most part only during the interaction of closely related languages). But, since there might be other important grammatical coincidences between the languages in question, the explanation just given may not be the only possible one.

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REFERENCES

- Abaev, V. I. Unpublished. "Osetinskij jazyk i fol'klor [Ossetic Language and Folklore]," II.
- . 1949. *Osetinskij jazyk i fol'klor* [Ossetic Language and Folklore], I. Moscow and Leningrad.
- . 1958–1989. *Istoriko-etimologičeskij slovar' osetinskogo jazyka* [Historical-Etymological Dictionary of the Ossetic Language]. 4 vols. Moscow and Leningrad.
- . 1965. *Skifo-evropejskie izoglossy: Na styke Vostoka i Zapada* [Scythian-European Isoglosses: On the border of East and West]. Moscow.
- Acharian, G. 1971. *Hayeren armatakan baġaran* [Etymological Root Dictionary of Armenian]. Vol. 1. Erevan. [In Armenian.]
- Adams, D. Q. and J. P. Mallory. 1997. "Wheel." *Encyclopedia of Indo-European Culture*. Ed. J. P. Mallory and D. Q. Adams. London and Chicago. 640-641.
- Adams, D. Q., J. P. Mallory, and D. A. Miller. 1997. "Horse." *Encyclopedia of Indo-European Culture*. Ed. J. P. Mallory and D. Q. Adams. London and Chicago. 273-279.
- Adrados, F. R. 1994. "More on Etruscan as an IE-Anatolian language." *Historische Sprachforschung* 107: 54-76.
- Alp, S. 1983. "Beiträge zur Erforschung des hethitischen Tempels: Kultanlagen im lichte der Keilschrifttexte: neue Deutungen." *Türk Tarih Kurumu Basımevi*. VI. Dizi-Sa. 23. Ankara.
- Altheim, F. 1950. *Der Ursprung der Etrusker*. Baden-Baden.
- Andersen, H. 1996. *Reconstructing Prehistoric Dialects: Initial Vowels in Slavic and Baltic*. Trends in Linguistics: Studies and Monographs. 91. Berlin.

- Andreev, M. S., and E. M. Peščereva. 1957. *Jagnobskie Teksty* [Yagnobi Texts], s priložením slovarja, sostavleného [with glossary prepared by] M. S. Andreevym, V. A. Livšicem i A. K. Pisarčik. Moscow and Leningrad.
- Anthony, D. 1986. "The 'Kurgan Culture', Indo-European Origins, and the Domestication of the Horse: a Reconsideration." *Current Anthropology* 27.4: 291-313.
- . 1991. "The Archaeology of Indo-European Origins." *The Journal of Indo-European Studies*, 19.3-4: 193-222.
- . 1994. "The Earliest Horseback Riders and Indo-European Origins: New Evidence from the Steppes." *Die Indogermanen und das Pferd: Festschrift für B. Schlerath (Akten des Internationalen interdisziplinären Kolloquiums)*. Ed. B. Hänsel and S. Zimmer. *Archaeolingua*. 4. Budapest. 185-197.
- . 1995. "Horse, Wagon and Chariot: Indo-European Languages and Archaeology." *Antiquity* 69: 554-565.
- Anthony, D. and D. Brown. 1991a. "Looking a Gift Horse in the Mouth: Identification of the Earliest Bitted Equids and the Macroscopic Analysis of Bit Wear." *Early Animal Domestication and its Cultural Context*. Ed. P. J. Crabtree, D. Campana, and K. Ryan. *MASCA Research Papers in Science and Archaeology, Supplement to vol. 6*. Philadelphia. 98-116.
- . 1991b. "The Origins of Horseback Riding." *Antiquity* 65 [246] (March): 22-38.
- Anthony, D. and N. Vinogradov. 1995. "Birth of a Chariot" *Archaeology* 48.2 (March-April): 36-41.
- Archi, A. 1977. "I poteri della Dea Ištar hurrita-ittita." *Oriens Antiquus*: 297-311.
- Ardzinba, V. G. 1982. *Rituali i mify Drevnej Anatolii* [Rites and Myths of Ancient Anatolia]. Moscow. [English summary, 248-251.]
- Arutunian, N. V. 1964. *Zemledelie i skotovodstvo v Urartu* [Agriculture and Cattle-breeding in Urartu]. Erevan: Izdatel'stvo Akademii Nauk Armjanskoj SSR.
- . 1985. *Toponimika Urartu* [Toponyms of Urartu]. Xurriti i urarty [Hurrians and Urartians]. 1. Erevan.
- Bailey, H. W. 1957. "A problem of the Indo-Iranian Vocabulary." *Rocznik Orientalistyczny* 21: 59-70.
- Bănăţeanu, V. 1943. "Noten zur griechischen Terminologie des Wagens." *Revue des Études indo-européennes* 3.1-2: 132-150.
- Bartholomae, C. 1979. *Altiranisches Wörterbuch zusammen mit Nacharbeiten und Vorarbeiten*. Berlin. [Reprint of 1904 ed. with add. Supplement of 1906 as a separate part with different pagination.]
- Bechtel, F. and A. Fick. 1894. *Die Griechischen Personennamen*. 2nd ed. Göttingen.
- Beckman, G. M. 1983. *Hittite Birth Rituals*. Studien zu den Boğazköy-Texten. 29. Wiesbaden.
- Beekes, R. S. P. 1990. "De verwantschap van het Etruskisch." *Lampas* 23: 5-18.
- Benecke, N. 1994. "Zur Domestikation des Pferdes in Mittel- und Osteuropa: Einige neue archäozoologische Befunde." *Die Indogermanen und das Pferd: Festschrift für*

- B. Schlerath (Akten des Internationalen interdisziplinären Kolloquiums). Ed. B. Hänsel and S. Zimmer. Archaeolingua. 4. Budapest. 123-144.
- Benveniste, E. 1929. *Essai de grammaire sogdienne*. Mission Pelliot en Asie Centrale. Série petit in-octavo. 3. Paris.
- . 1932. "Les classes sociales dans la tradition avestique." *Journal asiatique* 221: 117-134.
- . 1935. *Origines de la formation des noms en indo-européen*. Paris.
- . 1938. "Traditions indo-européennes sur les classes sociales." *Journal asiatique* 250: 529-549.
- . 1946. "Études iraniennes." *Transactions of the Philological Society*. London. 39-78.
- . 1955. "Homophonies radicales en indo-européen." *Bulletin de la Société de Linguistique de Paris* 51.1: 14-41.
- . 1964. "Éléments parthes en arménien." *Revue des études arméniennes* 1.
- . 1969. *Le vocabulaire des institutions indo-européennes*. Vol. 1: Économie, Parenté, Société. Paris.
- Bibikova, V. I. 1967. "K izucheniju drevnejshix domashnix loshadej Vostochnoj Evropy [On the Study of the Most Ancient Domesticated Horses of Eastern Europe]." *Bjuljeten' Moskovskogo Obshchestva ispytatelej prirody, Otdel Biologicheskij* [Bulletin of the Moscow Society of Naturalists, Biological Section] 72.3: 106-118.
- . 1969. "Do ystorii domestikacii konja na Pivdennomu Sxodi Jevropy [On the History of Horse Domestication in Southeastern Europe]." *Arxeologija* 22: 55-67. [In Ukrainian.]
- Blažek, V. 1992. *Historická analýza indoevropské zoologické terminologie (savci)* [Historical Analysis of Indo-European Zoological Terminology]. Autoreferát disertace. Brno. [In Czech.]
- Bloch, R. 1967. "À propos de l'Enéide de Virgile: Réflexions et perspectives." *Revue des études latines* 45: 325-342.
- . 1972. "L'État actuel des études étruscologiques." *Aufstieg und Niedergang des römischen Welt*. Vol. 1. Ed. H. Temporini. Berlin and New York. 14-21.
- Blümel, W. 1993. "Dialekte und Dialektmischung im südwestlichen Kleinasien." *Dialectologica Graeca (Actas del II Coloquio Internacional de Dialectología Griega)*. Ed. E. Crespo, J. L. García Ramón and A. Striano. Madrid. 29-35.
- Boessneck, J. and A. von den Driesch. 1976. "Pferde im 4/3 Jahrtausend v. Chr. in Ostanatolien." *Säugetierkundliche Mitteilungen* 24.
- Bogaevskij, B. L. 1933. "Etruski v rabotax N. Ia. Marr [Etruscans in the Works of N. Ia. Marr]." *Iz istorii dokapitalisticheskix formacij* [From the History of Pre-Capitalist Structures]. Moscow and Leningrad. 223-250.
- Bogoljubskij, S. N. 1959. *Proisxozhdenie i preobrazovanie domashnix zhivotnyx* [The Origin and Transformation of Domestic Animals]. Moscow.
- Bökönyi, S. 1974. *History of Domestic Mammals in Central and Eastern Europe*. Budapest.
- . 1978. "The Earliest Waves of Domestic Horses in East Europe." *Journal of Indo-European Studies* 6.1-2: 17-76.
- . 1980. "La domestication du cheval." *La Recherche* 114: 916-926.

- Bonfante, G. and I. Gelb. 1944. "The Position of Hieroglyphic Hittite among the Indo-European Languages." *Journal of the American Oriental Society* 64: 169-190.
- Bongard-Levin, G. M. and V. G. Ardzinba, eds. 1988. *Drevnij Vostok: Etno-kul'turnye svyazi* [The Ancient East: Ethnocultural Connections]. Vol. 80. Moscow.
- Boretzky, N. and B. Igla. 1994. *Wörterbuch Romani Deutsch Englisch mit einer Grammatik der Dialektvarianten*. Wiesbaden.
- Bosch-Gimpera, P. 1961. *Les Indo-Européens: Problèmes archéologiques*. Paris: Payot.
- Boyce, M. 1968. "On Sacred Fires of the Zoroastrians." *Bulletin of the School for Oriental Research* 31.1: 52-68.
- Brixhe, C. 1976. *Le dialecte grec de Pamphylie*. Paris.
- Buccellati, G. 1988. "Scope of the Research." *Mozan 1: Soundings of the First Two Seasons*. G. Buccellati and M. Kelly-Buccellati. Bibliotheca Mesopotamica. 20. Malibu. 29-41.
- Buccellati, G. and M. Kelly-Buccellati. 1988. *Mozan 1: Soundings of the First Two Seasons*. Bibliotheca Mesopotamica. 20. Malibu.
- . 1995-1996. "The Royal Storehouse of Urkesh: the Glyptic Evidence from the Southwestern Wing." *Archiv für Oriensforschung* 42-43: 1-32.
- . 1996. "The seals of the King of Urkesh: Evidence from the Western Wing of the Royal Storehouse AK." *Wiener Zeitschrift für die Kunde des Morgenlandes: Festschrift Hans Hirsch* 86: 75-100.
- . 1997. "Urkesh: the First Hurrian Capital." *Biblical Archeologist* 60.2 (June): 77-96.
- , eds. 1998. *Urkesh and the Hurrians: Studies in Honor of Lloyd Cotsen*. Urkesh/Mozan Studies. 3. Bibliotheca Mesopotamica. 26. Malibu.
- Buck, C. D. 1988. *A Dictionary of Selected Synonyms in the Principal Indo-European Languages*. Chicago.
- Būga, K. 1958-1961. *Rinktiniai raštai* [Complete Works]. 3 vols. Vilnius. [In Lithuanian, Russian and German.]
- Bugge, Sophus. 1909. "Das Verhältnis der Etrusker zu den Indogermanen und der vorgriechischen Bevölkerung Kleinasiens und Griechenlands." *Sprachliche Untersuchungen*. Ed. Alf Torp. Strassburg.
- Burling, R. 1967. "Proto-Lolo-Burmese." *International Journal of American Linguistics* 33.2.2.
- Burrow, T. and M. B. Emenau. 1986. *A Dravidian Etymological Dictionary*. Repr. of 2nd ed. Oxford: Clarendon Press.
- Calame, C. 1996. *Thésée et l'imagination athénien: légende et culte en Grèce antique*. Lausanne.
- Carruba, O. 1993. "Dynasten und Städte: sprachliche und sonstige Bemerkungen zu den Namen auf den lykischen Münzen." *Akten des II. Internationalen Lykiens-Symposiums*. Vol. 1. Vienna. 11-26.
- Cassin, E. and J.-J. Glassner. 1977. *Anthroponymie et anthropologie de Nuzi*. Vol. 1. Malibu.
- Chantraine, P. 1973. *Grammaire homérique*. Vol. 1. Paris.
- . 1979. *La formation des noms en grec ancien*. Paris.

- . 1990. *Dictionnaire étymologique de la langue grecque: histoire des mots*. Repr. Paris.
- Charsekin, A. I. (= Kharsekin, A. I.) 1963. "Zur Deutung etruskischer Sprachdenkmäler." *Untersuchungen zur römischen Geschichte*. Vol. 3. Ed. F. Altheim. Frankfurt am Main.
- Černý, J. 1976. *Coptic Etymological Dictionary*. Cambridge.
- Childe, V. G. 1950. *New Light on the Most Ancient East*. New York.
- . 1951. "The First Wagons and Carts from the Tigris to the Severn." *Proceedings of the Prehistoric Society* 17.2: 177-194.
- . 1954a. "The Diffusion of Wheeled Vehicles." *Ethnographisch-Archäologische Forschungen* 2: 1-17.
- . 1954b. "Rotary Motion." *A History of Technology*. Ed. C. Singer, E. Holmyard, and A. Hall. Vol. 1. Oxford. 716-729.
- Cimburskij, V. L. 1994. "Zametki po etruskomu jazyku i kul'ture [Notes on Etruscan language and culture]." *Etruski i Sredizemnomor'je: Jazyk, Archeologija, Iskusstvo [Etruscans and the Mediterranean Area]*. Moscow. 17-32.
- Civil, M. 1966. "Notes on Sumerian Lexicography 1." *Journal of Cuneiform Studies* 20.3-4: 119-124.
- Cornil, P. 1990. "Liste des noms géographiques des textes hittites." *Hethitica* 10: 7-108.
- Cornil, P. and R. Lebrun. 1972. "La tablette K Bo XVI 98 (2211/c)." *Hethitica* 1.
- D'Arcy Thompson, W. 1936. *A Glossary of Greek Birds*. 2nd ed. London.
- Dawkins, R. M., ed. 1927. *The Sanctuary of Artemis Orthia at Sparta*. London.
- Delamarre, X. 1984. *Le vocabulaire indo-européen: lexique étymologique thématique*. Paris.
- De Marinis, R., ed. 1986-1987. *Gli Etruschi a nord del Po*. Mantua.
- De Simone, C. 1960-1970. *Die griechische Entlehnungen im Etruskischen*. 2 Vols. Wiesbaden.
- Detienne, M. and J.-P. Vernant. 1979. *La cuisine du sacrifice en pays grec*. Paris.
- Detschev, D. 1952. *Charakteristik der thrakischen Sprache*. Sofia. [In Bulgarian and German.]
- Diakonoff, I. M. 1951a. "Assiro-vavilonskie istochniki po istorii Urartu [Assyrian-Babylonian Sources on the History of Urartu]." *Vestnik drevnej istorii/Revue des études anciennes*. 2-4.
- . 1951b. "Zametki po urartskoj epigrafike [Notes on Urartian Epigraphy]." *Epigrafika Vostoka [Epigraphy of the (Near) East]*. 4.
- . 1963. *Urartskije pis'ma i dokumenty [Urartian Letters and Documents]*. Moscow and Leningrad.
- . 1967. *Jazyki Drevnei Perednei Azii [Languages of the Ancient Near East]*. Moscow.
- . 1971. *Hurrisch und Urartäisch*. Münchener Studien zur Sprachwissenschaft. 6. Munich.
- . 1977. "On Cybele and Attis in Phrygia and Lydia." *Acta Antiqua* 25: 333-340.
- . 1978. "Xurrito-urartskij i vostochno-kavkazskie jazyki [Hurrian-Urartian and Eastern Caucasian Languages]." *Drevnij Vostok [Ancient Near East]* 3: 25-38. [English summary, 260.]

- . 1980. "Xurritskij jazyk i drugie substratnye jazyki Maloj Azii [Hurrian and the Other Substrate Languages of Asia Minor]." *Drevnie jazyki Maloj Azii [Ancient Languages of Asia Minor]*. Ed. I. M. Diakonoff and V. V. Ivanov. Moscow. 99-105.
- . 1985. "Znacheniye Eblu dl'a istorii i jazykoznanija [The Importance of Ebla for History and Linguistics]." *Drevnjaja Ebla [Ancient Ebla]*. Ed. I. M. Diakonoff. Moscow. 318-349.
- . 1990. *Arxaischeskie mify Vostoka I Zapada [Archaic Myths of Orient and Occident]*. Moscow. [English summary, 244-246.]
- Diakonoff, I. M. and S. A. Starostin. 1986. *Hurro-Urartian as an Eastern Caucasian Language*. Münchener Studien zur Sprachwissenschaft. 12. Munich.
- . 1988. "Xurrito-urartskie i vostochnokavkazskie jazyki [Hurro-Urartian and Eastern Caucasian Languages]." *Drevnij Vostok: Etno-kul'turnye svyazi [Ancient East: Ethnocultural connections]*. Vol. 80. Ed. G. M. Bongard-Levin and V. G. Ardzinba. Moscow. 164-207. [Corresponds to Diakonoff and Starostin 1986.]
- Dressler, W. 1968. *Studien zur verbalen Pluralität: Iterativum, Distributivum, Durativum, Intensivum in der allgemeinen Grammatik, im Lateinischen und Hethitischen*. Vienna.
- Dumézil, G. 1956. *Déesses latines et mythes védiques*. Brussels.
- . 1966. *La religion romaine archaïque*. Paris.
- . 1973. *Mythe et épique: histoires romaines*. Paris.
- . 1978. *Romans de Scythie et d'alentour*. Paris.
- . 1979. *Mariages indo-européens suivis de quinze questions romaines*. Paris.
- Durante, M. 1968. "Considerazioni intorno al problema della classificazione dell'etrusco." *Studi Micenei ed Egeo-Anatolici* 17: 7-60.
- Dury-Moyaers, G. and M. Renard. 1981. "Aperçu critique de travaux relatifs au culte de Juno." *Aufstieg und Niedergang des Römischen Welt*. Vol. 2.17. Ed. H. Temporini. Berlin and New York. 143-202.
- Dzhaugian, G. V. 1963. *Urartskij i indoevropskie jazyki [The Urartian and Indo-European Languages]*. Erevan. [English summary, 148-155].
- . 1967. *Vzaimootnoshenie indoevropskix, xurrito-urartskix i kavkazskix jazykov [The Relationship between the Indo-European, Hurro-Urartian and Caucasian Languages]*. Erevan.
- . 1982. *Sravnitel'naja grammatika armjanskogo jazyka [Comparative Grammar of Armenian]*. Erevan.
- Ebeling, E. 1951. *Bruchstücke einer Mittellassyrischen Vorschriftenammlung für die Akklimatisierung und Training von Wagenpferden*. Berlin.
- Eckert, R. 1995. "Wagen und Pferd in Sprache und Kultur der alten Preussen." *Baltistica* 30 (1): 49-59.
- Edel'man, D. I. 1986. *Sravnitel'naja grammatika vostochnoiranskix jazykov: Fonologija [Comparative Grammar of Eastern Iranian Languages]*. Moscow.
- Eden, P. T. 1964-1965. "The Etruscans in the Aeneid." *Proceedings of the Virgil Society* 4: 31-40.
- Edgerton, F. 1953. *Buddhist Hybrid Sanskrit: Grammar and Dictionary*. Vol. 2. New Haven.

- Efimov, V. A. 1986. *Jazyk ormuri v sinxronnom i istoricheskom osveshchenii* [The Ormuri Language: a Synchronic and Diachronic View]. Moscow.
- Ellenbogen, M. 1962. *Foreign Words in the Old Testament: Their Origin and Etymology*. London.
- Ellinger, P. 1984. "Les ruses de guerre d'Artémis." *Recherches sur les cultes grecs et l'Occident* 2: 51-67.
- Enking, R. 1954. *P. Vergilius Maro Vates Etruscus*.
- Erman, A., ed. 1922/1966. *The Ancient Egyptians: A Sourcebook of Their Writings*. New York.
- Ernout, A. 1945. *Morphologie historique du latin*. Paris.
- . 1947. *Recueil de textes latins archaïques*. Paris.
- Ernout, A. and A. Meillet. 1994. *Dictionnaire étymologique de la langue latine: histoire des mots*. Repr. of 4th ed. Paris.
- Esajan, S. A. 1966. *Oruzhie i voennoe delo Drevnej Armenii (III-I tys. do n.e.)* [Weapons and Military Technique in Ancient Armenia]. Erevan.
- . 1994. *Chariot Army and Cavalry in Old Armenia*. Erevan. [In Armenian.]
- Fauth, W. 1981. "Ishtar als Löwingöttin und die löwenköpfige Lamaštu." *Die Welt des Orients* 12: 21-36.
- Fordyce, C. J., ed. 1978. *Catullus*. Oxford.
- Forssman, B. 1980. "Hethitisch kurka- Comm. 'Fohlen'." *Zeitschrift für vergleichende Sprachforschung* 94: 70-74.
- Freidenberg, O. M. 1997. *Image and Concept: Mythopoetic Roots of Literature: Sign/Text/Culture*. Studies in Slavic and Comparative Semiotics. 2. Amsterdam.
- Friedrich, J. 1957. *Hethitisches Wörterbuch: kurzgefasste kritische Sammlung der Deutungen Hethitischer Wörter*. Vol. 1. Heidelberg.
- Gamkrelidze, T. V. and V. V. Ivanov. 1995. *Indo-European and Indo-Europeans*. 2 vols. Berlin and New York. [First published in Russian in 1984.]
- Gatiev, B. 1876. *Sueverija i predrassudki u osetin* [Beliefs and Prejudices among the Ossetians]. *Sbornik svedenij o kavkazskix gorcax* [Collection of Data on the Caucasian Mountaineers] 9.3.1: Tiflis.
- Gauthiot, R. 1914-1923. *Essai de grammaire sogdienne*. Vol. 1 (Phonétique). Paris.
- Gelb, I. J. 1969. *Sequential Reconstruction of Proto-Akkadian*. Assyriological Studies. 18. Chicago.
- Georgiev, V. 1943. *Die sprachliche Zugehörigkeit der Etrusker*. Sofia.
- . 1962. *Hethitisch und Etruskisch: die hethitische Herkunft der Etruskischen Sprache*. Linguistique balkanique. 5.1. Sofia.
- . 1971. *Etruskische Sprachwissenschaft*. Sofia.
- . 1979. *La lingua e l'origine degli etruschi*. Rome.
- Gercenberg, L. G. 1981. "Xotahosaksij jazyk [The Khotanese Saka Language]." *Osnovy iranskogo jazykoznanija. Sredneiranskije jazyki* [Foundations of Iranian Linguistics: Middle Iranian languages]. Ed. V. S. Rastorgueva. Moscow. 233-313.

- Gheorghiu, D. 1993. "A First Representation of a Domesticated Horse in the Fifth Millennium B.C. in Eastern Europe? Ceramic evidence." *The History of the Knowledge of Animal Behavior*. Ed. L. Bodson. Lege. 93-115.
- . 1994. "Horse Head Scepters: First Images of Yoked Horses." *The Journal of Indo-European Studies* 22.3-4: 221-250.
- Gindin, L. A. 1967. *Jazyk drevnejshego naselenija Juga Balkanskogo poluostrova. Fragment indoevropskoj onomastiki* [The Language of the Most Ancient Population of the South Balkans: a Fragment of Indo-European Onomastic Study]. Moscow.
- . 1993. *Naselenije gomerovskoj Troi* [The Population of Homeric Troy]. Moscow. [In Russian with a French summary ("La population de Troie homérique: recherches historiques et philologiques sur l'ethnologie de l'Anatolie ancienne"), 199-205.]
- Girbal, C. 1990. "Zur Grammatik des Mitanni-Hurritischen." *Zeitschrift für Assyriologie und Vorderasiatische Archäologie* 80: 95-101.
- Glare, P. G. W., ed. 1996 *Oxford Latin Dictionary*. Oxford.
- Gleye, A. 1905. *Opyt resheniya "vanskogo (urartskogo) voprosa"* [An Essay on the Solution of the "Van (Urartu) Problem"]. Toms.].
- Goedike, H. 1968. "The Capture of Joppa." *Cahiers d'Égypte* 43: 219-233.
- Goetze, A. 1962. *Hippologia Hethitica* by A. Kammenhuber. *Journal of Cuneiform Studies* 16.1: 30-35.
- . 1974. *Kulturgeschichte Kleinasiens*. Repr. of 1957 ed. *Handbuch der Altertumswissenschaft*. 3.2. Munich.
- Goetze, R. V. 1980. *Etruskij i kartvel'skij* [Etruscan and Kartvelian]. Tbilisi.
- Gordon, C. H. 1965. *Ugaritic Textbook. Glossary. Indexes*. *Analecta Orientalia*. 38. Rome.
- Gordon, M. L. 1934. "The Family of Virgil." *Journal of Roman Studies* 24.1.
- Gorelik, M. V. 1985. "Boevye kolesnicy perednego Vostoka III-II tysjacheletij do n.e. [War Chariots of the Near East (III-II millennia B.C.).]" *Drevnjaja Anatolija* [Ancient Anatolia]. Ed. B. B. Piotrovskij. Moscow. 183-202. [English summary, 252-253.]
- Grantovsky, E. A. 1970. *Rannijaja istorija iranskix plemjen Srednej Azii* [Early History of the Iranian Tribes of Central Asia]. Moscow.
- Greppin, J. A. C. 1978. *Classical and Middle Armenian Bird Names: A Linguistic, Taxonomic and Mythological Study*. Delmar, New York.
- Grillot-Susini, F. and C. Roche. 1987. *Éléments de grammaire élamite*. Synthèse. 29. Paris.
- Griunberg, A. L. 1972. *Mundzhanskij jazyk. Teksty. Slovar'*. *Grammaticheskij ocherk*. [The Mundzhan Language. Texts. Dictionary. Grammatical Sketch]. Jazyki Vostochnogo Gindukusha [Languages of the Eastern Hindukush]. Leningrad.
- . 1980. *Jazyk kati. Teksty. Grammaticheskij ocherk*. [The Kati Language. Texts. Grammatical Sketch]. Jazyki Vostochnogo Gindukusha [Languages of the Eastern Hindukush]. Moscow.
- Griunberg, A. L. and I. M. Steblin-Kamenskij. 1976. *Vaxanskij jazyk. Teksty. Slovar'*. *Grammaticheskij ocherk* [The Vakhnan language. Texts. Dictionary. Grammatical Sketch].

- Jazyki Wostocznego Gindukusha [Languages of the Eastern Hindukush]. Moscow.
- Gusmani, R. 1964. *Lydisches Wörterbuch*. Heidelberg.
- Güterbock, H. G. 1982. *Les hiéroglyphes de Yazılıkaya: à propos d'un travail récent*. Synthèse. 11. Paris. [In French and English.]
- Gvaxaria, V. A. 1963 *Slovar'-simfoniya urartsogo jazyka* [A Thesaurus of the Urartian Language]. Moscow. [In Russian and Georgian.]
- Haas, V. 1982. *Hethitische Berggötter und hurritische Steindämonen: Riten, Kulte und Mythen: Eine Einführung in die altkleinasiatischen religiösen Vorstellungen*. Kulturgeschichte der antiken Welt. 10. Manz am Rhein.
- . 1994. *Geschichte der Hethitischen Religion*. Handbuch der Orientalistik. 1.15. Leiden.
- Haas, V. and G. Wilhelm. 1974. *Hurritische und luwische Texte aus Kizzuwatna*. Hurritologische Studien. 1. Neukirchen and Vluyn.
- Hajnal, J. 1995. "Der lykische Vokalismus." *Arbeiten aus der Abteilung "Vergleichende Sprachwissenschaft"*. Ed. F. Lochner von Hüttenbach, H. Mittelberg, M. Ofitsch, and C. Zinko. Vol. 10. Graz.
- Hamp, E. P. 1976. "On the Distribution and Origin of *vatra*." *Opuscula slavica et linguistica*. Ed. H. D. Pohl and N. Salnikow. Klagenfurt. 201-210.
- . 1981. "Autochthonous *vatra*." *Revue romaine de linguistique* 24: 315.
- . 1990. "The Indo-European Horse." *When Worlds Collide: Indo-Europeans and Pre-Indo-Europeans*. Ed. T. L. Markey and J. Greppin. Ann Arbor. 211-226.
- Hančar, F. 1955. *Das Pferd in prähistorischer und früher historischer Zeit*. Wiener Beiträge zur Kulturgeschichte und Linguistik. 11. Vienna.
- Hanfman, M. A., and J. C. Waldbaum. 1969. "Kybele and Artemis." *Archaeology* 22.4.
- Hänsel, B. and S. Zimmer, eds. 1994. *Die Indogermanen und das Pferd: Festschrift für B. Schlerath* (Akten des Internationalen interdisziplinären Kolloquiums). Archaeolingua. 4. Budapest.
- Haudricourt, A.-G. 1987. *La technologie, science humaine: recherches d'histoire et d'ethnologie des techniques*. Paris.
- Haudricourt, A.-G. and M. J.-B. Delamarre. 1986. *L'homme et la charrue à travers le monde*. Paris.
- Haudry, J. 1978. *L'emploi des cas en védique: introduction à l'étude des cas en indo-européen*. Lyon.
- Hauschild, R. 1959. "Die Tirade von der Wagenwettfahrt des Königs Haosravah und des Junkers Nārēmanah." *Mitteilungen des Instituts für Orientforschung* 7.1: 1-78.
- Hauser, R. 1998. "The Equids of Urkesh: What the Figurines Say." *Urkesh and the Hurrians: Studies in Honor of Lloyd Cotsen*. Ed. G. Buccellati and M. Kelly-Buccellati. Urkesh/Mozan Studies. 3. Bibliotheca Mesopotamica. 26. Malibu. 63-74.
- Häusler, A. 1985. "Die Anfänge von Rad und Wagen in der Kulturgeschichte Europas." *Produktivkräfte und Produktionsverhältnisse in ur- und frühgeschichtlicher Zeit*. Ed. F. Horst and B. Krüger. Berlin. 121-133.

- . 1986. "Rad und Wagen zwischen Europa und Asien." *Achse, Rad und Wagen*. Ed. W. Treue. Göttingen. 139-152.
- . 1994. Archäologische Zeugnisse für Pferd und Wagen in Ost- und Mitteleuropa. *Die Indogermanen und das Pferd: Festschrift für B. Schlerath (Akten des Internationalen interdisziplinären Kolloquiums)*. Ed. B. Hänsel and S. Zimmer. Archaeolingua. 4. Budapest. 217-258.
- Hermes, G. 1936a. "Das gezähmte Pferd im neolithischen und frühbronzezeitlichen Europa?" *Anthropos* 31.1-2: 115-129.
- . 1936b. "Das gezähmte Pferd im Alten Orient." *Anthropos* 31.3-4: 364-394.
- Hertel, J. 1925. *Die arische Feuerlehre*. Leipzig.
- . 1927. *Sonne und Mithra im Awesta*. Leipzig.
- . 1929. *Beiträge zur Erklärung des Awestas und des Vedas*. Leipzig.
- Heubeck, A. 1961. *Praegraeca: Sprachliche Untersuchungen zum vorgriechisch-indogermanischen Substrat*. Erlanger Forschungen. A.12. Erlangen.
- . 1962. "Kleinasiatisches." *Sprache* 8: 1.
- . 1969. *Lydisch*. Handbuch der orientalistik. 2.2. Leiden and Köln.
- Hoffner, H. A. 1998. "Hurrian Civilization from a Hittite Perspective." *Urkish and the Hurrians: Studies in Honor of Lloyd Cotsen*. Ed. G. Buccellati and M. Kelly-Buccellati. *Urkish/Mozan Studies*. 3. Bibliotheca Mesopotamica. 26. Malibu. 167-200.
- Hoffner, H. A. and H. G. Güterbock, eds. 1986-1994. *The Hittite Dictionary of the Oriental Institute of the University of Chicago*. Vol. 3, fasc. 3 and vol. P, fasc. 1. Chicago.
- Holland, L. A. 1935. "Place Names and Heroes in the Aeneid." *American Journal of Philology* 56.
- Hrozny, F. B. 1916. *Die Sprache der Hethiter, ihr bau und ihr Zugehörigkeit zum indogermanischen Sprachstamm: ein Entzifferungsversuch*. Leipzig.
- . 1929. "L'invasion des Indo-Européens en Asie Mineure vers 2000 av. J. C." *Archiv Orientalní* 1: 273-299.
- Hübschmann, H. 1897/1972. *Armenische Grammatik*. Vol. 1. Bibliothek Indogermanischer Grammatikern. 6. Hildesheim and New York.
- Huld, M. E. 1984. *Basic Albanian Etymologies*. Columbus, Ohio.
- Hutter, M. 1995. "Der luwische Wettergott *piḥaššašši* und der griechische Pegasos." *Studia Onomastica et Indogermanica (Festschrift für Fritz Lochner von Hüttenbach zum 65. Geburtstag)*. Ed. M. Ofitsch and C. Zinko. Graz. 79-97.
- Illich-Svitych, V. M. 1965. "Caucasica." *Etimologija* 1964: 334-337.
- . 1971-1976. *Opyt sravnenija nostraticheskix jazykov (semitoxamitskij, kartvel'skij, indoeuropejskij, ural'skij, dravidijskij, altajskij)*. *Vvedenie. Sravnitel'nyj slovar'* [An Essay in Comparing Nostratic Languages (Semitic-Hamitic, Kartvelian, Indo-European, Uralic, Dravidian, Altaic). Introduction. Comparative Dictionary (b-K); (l-z)]. Moscow.
- Ivanov, V. V. 1956. "Novaja literatura o dialektnom chlenenii indoeuropejskogo jazyka [New Literature on the Dialect Relationship within the Indo-European Proto-Language]." *Voprosy jazykoznanija* 2: 111-121.

- . 1958. "Problema jazykov centum i satəm [The Problem of centum and satəm Languages]." *Voprosy jazykoznaniia* 4: 12-23.
- . 1963. *Xettskij jazyk [Hittite]*. Moscow.
- . 1964. "Proisxozhdenie imeni Kuxulina [On the Origin of Kuchulain's Name]." *Voprosy sravnitel'noj filologii: Sbornik statej k 70-letiju V. M. Žirmunskogo [Questions of Comparative Philology: Festschrift V. M. Žirmunsky]*. Ed. M. P. Alekseev. Moscow and Leningrad. 451-461.
- . 1974. "Opyt istolkovanija drevneindijskix ritual'nyx i mifologicheskix terminov, obrazovannyx ot aśva- 'kon'" (Kul't konja i derevo aśvattha v Drevnej Indii) [An Interpretation of Ancient Indian Ritual and Mythological Terms Derived from aśva- 'horse' (The Horse Cult and the aśvattha Tree in Ancient India)]." *Problemy istorii jazykov i kul'tury narodov Indii. Sbornik statej pamjati V. S. Vorobjeva-Desjatovskogo [Problems in the Linguistic and Cultural History of the Peoples of India. V. S. Vorobjev-Desjatovskij Memorial Volume]*. Moscow. 75-138.
- . 1980. "K indoevropskim nazvanijam kola i kolesnicy [On Indo-European Terms for Wheel and Chariot]." *Studia linguistica in honorem Vladimiri I. Georgieva*. Sofia. 112-117.
- . 1981. *Slavjanskij, baltijskij i rannebalkanskij glagol: Indoevropskie istoki [The Slavic, Baltic and Paleo-Balkan Verb: Indo-European Sources]*. Moscow.
- . 1983a. *Istorija baltijskix i slavjanskix nazvanij metallov [History of the Baltic and Slavic Names of Metals]*. Moscow.
- . 1983b. "K istolkovaniju etruskix tekstov na osnove sravnitel'nogo jazykoznaniia [Towards the Interpretation of Etruscan Texts in the Light of Comparative Linguistics]." *Tekst: semantika i struktura [Text: Semantics and Structure]*. Ed. T. V. Tsvijan. Moscow. 36-46.
- . 1984. "A ló ugor neve és indoeurópai átvételei [The Name of the Horse in Ugrian Languages and Indo-European Correlates]." *Nyelv, mitosz, kultúra [Language, Myth, Culture]*. Ed. V. V. Ivanov. Budapest. 213-214. [In Hungarian.]
- . 1985. "Ob otnoshenii xattskogo jazyka k severozapadnokavkazskim [Hattic and North Caucasian]." *Drevnjaja Anatolija [Ancient Anatolia]*. Ed. B. B. Piotrovskij. Moscow. 26-59. [With English summary.]
- . 1988. "Drevnevostochnye svjazi etruskogo jazyka [Ancient Oriental Connections of Etruscan]." *Drevnij Vostok: Etno-kul'turnye svjazi [The Ancient East: Ethnocultural Connections]*. Vol. 80. Ed. G. M. Bongard-Levin and V. G. Ardzinba. Moscow. 208-218.
- . 1993. "Contribución al estudio semiótico de la historia cultural de la gran ciudad." *Escritos 9: Revista del Centro de Ciencias del Lenguaje* (January-December): 107-127.
- . 1997. "Foreword." *Image and Concept: Mythopoeic Roots of Literature: Sign/Text/Culture*. O. M. Freidenberg. Studies in Slavic and Comparative Semiotics. 2. Amsterdam. ix-xvi.
- . 1999. "Palatalization and Labiovelars in Luwian." *Proceedings of the Tenth Annual UCLA Indo-European Conference (Los Angeles, May 21-23, 1998)*. Ed. K.

- Jones-Bley, M. Huld, A. Della Volpe and M. Robbins Dexter. *Journal of Indo-European Studies Monograph*. 32. Washington. 27-48.
- Jakob-Rost, L. 1965. "Beiträge zur hethitischen Hofzeremoniell (I BoT I 36)." *Mitteilungen des Instituts für Orientforschung* 11: 165-225.
- Jakobson, R. 1985. *Selected Writings VI: Contributions to Comparative Mythology: Studies in Linguistics and Philology*, 1972-1982. Berlin.
- Jankovskaja, N. B., ed. 1968. *Klinopisnye teksty iz Kiul'-Tepe v sobranijax SSSR* [Cuneiform Texts from Kül'-Tepe in USSR collections]. *Pamjatniki pis'mennosti Vostoka* [Monuments of Near Eastern Writing]. 14. Moscow. [With English summary.]
- Jasanoff, J. 1979. "Notes on the Armenian Personal Endings." *Historische Sprachforschung* 93.1: 133-149.
- Jäschke, H. Á. 1887. *A Tibetan-English Dictionary*. Delhi.
- Ješina, P. J. 1886. *Románi Čib oder die Zigeuner-Sprache: Grammatik, Wörterbuch, Chrestomathie*. 3rd ed. Leipzig.
- Kahle, P. and F. Sommer. 1930. "Die Lydisch-aramäische Bilingue." *Kleinasiatische Forschungen*. Vol. 1.3. Ed. F. Sommer and H. Ehelolf. Weimar. 18-86.
- Kallérís, J. N. 1954. *Les anciens macédoniens: étude linguistique et historique*. Vol. 1. Collection de l'Institut Français d'Athènes. Athens.
- Kammenhuber, A. 1961. *Hippologia Hethitica*. Wiesbaden.
- Kammerzell, F. 1993. *Studien zu Sprache und Geschichte der Karer in Ägypten*. Vol. 27 of *Reihe Ägypten*. Ed. F. Junge and W. Westendorf. Göttinger Orientforschungen. 4. Wiesbaden.
- Karulis, K. 1992. *Latviešu etimoloģijas vārdnīca* [Latvian Etymological Dictionary]. 2 vols. Rīgā. [In Latvian.]
- Kettemann, R. 1982. Rev. of *Vergil. Eclogues*, ed. R. Coleman. *Glotta* 54.6: 509-515.
- Kharsekin, A. I. (= Charsekin, A. I.) 1961. "Etruscan Studies in the USSR." *Studi Etruschi* II.28 (1960): 485-495.
- Khodzhash, S. I., N. S. Trukhtanova, and K. L. Oganessian. 1979. *Erebuni. Pamjatniki urart'skogo zodchestva VIII-VI v. n.e.* [Monuments of Urartian Architecture of the VIII-VI c. B.C.]. Moscow.
- Klepikova, G. P. 1973. "Iz karpatsko-dunajskoj terminologii vysokogornogo skotovodstva: vatra [From the Carpathian-Danube Terminology of High-Mountain Cattle-Breeding: vatra]." *Balkanskoe jazykoznanie* [Balkan Linguistics]: 149-169.
- Klimov, G. A. 1994. *Drevnejšie indoeuropeizmy kartvel'skix jazykov* [The Oldest Indo-European Borrowings in Kartvelian]. Moscow.
- König, F. W. 1965-1977. *Die elamischen Königsinschriften*. *Archiv für Orientforschung*. Beiheft 16. Graz.
- Korolev, A. A. 1984. *Drevnejšie pamjatniki irlandskogo jazyka* [The Oldest Monuments of the Irish Language]. Moscow. [English summary, 201-203.]
- Kossowicz, C. 1872. *Inscriptiones Palaeo-Persicae Achaemenidarum*. St. Petersburg.

- Kozhin, P. M. 1985. "K probleme proisxozhdenija kolesnogo transporta [On the Problem of the Origins of Wheeled Vehicles]." *Drevnjaja Anatolija* [Ancient Anatolia]. Ed. B. B. Piotrovskij. Moscow. 183-202. [English summary, 252.]
- Kramers, J. H. 1954. *Iranian Fire-Worship*. *Analecta orientalia*. Leiden.
- Krause, W. 1937. "Zu den Namen der Etrusker in Vergils *Aeneis*." *Commentationes Vindobonenses* 3 (1937): 31-43.
- . 1993. *Runen*. Repr. of 2nd ed. Sammlung Götschen. Berlin and New York.
- Kretschmer, P. 1930. "Der name der Lykier und die andere kleinasiatische Völkernamen." *Kleinasiatische Forschungen*. Vol. 1.3. Ed. F. Sommer and H. Ehelolf. Weimar. 1-17.
- Kronasser, H. 1963. *Die Umsiedelung der Schwarzen Gottheit: das hethitische Ritual KUB XXIX 4 (des Ullippi)*. Österreichische Akademie der Wissenschaften, Philosophisch-Historische Klasse: Sitzungsberichte. 3. Vienna.
- Kurdoev, K. and I. Cukerman. 1950. "Kurdskie teksty [Kurd Texts]." *Iranskije jazyki II* [Iranian Languages II]. Ed. V. I. Abaev. *Trudy instituta jazyka i myshlenija im. N. Ia. Marr, serija iranskaja* [Transactions of the N. Ia. Marr Institute of Language and Thought, Iranian Series]. 6. Moscow and Leningrad. 29-60.
- Kushnareva, K. X. and T. N. Chubanishvili. 1970. *Drevnie kul'tury luzhnogo Kavkaza* [The Ancient Cultures of the Southern Caucasus]. Leningrad.
- Kuz'mina, E. E. 1996-1997. *Ekologija stepej Evrazii i problema proisxozhdenija nomadizma* [Ecology of the Eurasian Steppes and the Origin of Nomadism]. 2 vols. *Vestnik drevnej istorii* [Journal of Ancient History]. [With English summaries.]
- Lafon, R. 1933. "Le nom de l'argent dans les langues caucasiennes." *Revue hittite et asianique* 2.10-11 (January-April): 90-95.
- Lamberterie, C. de. 1978. "Armeniaca I-VIII: études lexicales." *Bulletin de la Société de linguistique de Paris* 73.1: 243-285.
- Lambertz, M. 1959. *Grammatik der Albanischen Sprache*. Vol. 3 of *Lehrgang des Albanischen*. Halle [Saale].
- Landau, O. 1958. *Mykenisch-Griechische Personennamen*. Göteborg.
- Lane, G. S. 1960. "The Indo-European Labiovelars in Tocharian." *Indogermanica: Festschrift für W. Krause*. Heidelberg.
- Langdon, S. 1926. "A Hymn to Ishtar as the Planet Venus and to Idin-Dagan as Tammuz." *Journal of the Royal Asiatic Society* (January): 15-42.
- Laroche, E. 1959. *Dictionnaire de la langue louvite*. Bibliothèque archéologique de l'Institut Français d'archéologie d'Istanbul. Paris.
- . 1960a. "Études hourrites." *Revue d'assyriologie et d'archéologie orientale* 54: 117-202.
- . 1960b. "Réflexions sur des problèmes de linguistique étrusque." *Revue des études latines* 38: 70-72.
- . 1960c. *Koubaba déesse anatolienne et le problème des origines de Cybèle: Éléments orientaux dans la religion grecque ancienne*. Paris.
- . 1966. *Les Noms des Hittites*. Études linguistiques. 4. Paris.

- , 1971. *Catalogue des textes hittites. Études et commentaires*. 75. Paris. [Computerized version by B. J. Collins: <http://www.asor.org/HITTITE/CTHHP.html>.]
- , 1980. *Glossaire de la langue hourrite. Études et commentaires*. 83. Paris.
- , 1989. "La version hourrite de la liste AN de Meskene-Emar." *Académie des inscriptions et belles-lettres: comptes rendus* (January-March): 8-12.
- Larsen, M. T. 1967. *Old Assyrian Caravan Procedures*. Publications de l'institut historique et archéologique néerlandais de Stamboul. 22. Istanbul.
- , 1976. *The Old Assyrian City-States and Its Colonies: Mesopotamia*. Copenhagen Studies in Assyriology. 4. Copenhagen.
- Leclant, J. 1960. "Remarques sur Astarté à cheval." *Syria* 37: 1-67.
- Lehmann, W. P. 1986. *A Gothic Etymological Dictionary*. Leiden.
- , 1993. *Theoretical Bases of Indo-European Linguistics*. London and New York.
- Lejeune, M. 1958. *Mémoires de philologie mycénienne*. Première série. Paris.
- , 1968 "Chars et roues à Cnossos." *Minos* 9: 9-61.
- , 1972. *Phonétique historique du mycénien et du grec ancien*. Tradition de l'humanisme. 9. Paris.
- Levi, D. 1951. "La dea micenea a cavallo." *Studies Presented to D. M. Robinson on His Seventieth Birthday*. Vol. 1. Ed. G. E. Mylonas. Saint Louis, Missouri. 108-125.
- Levine, M. A. 1990. "Dereivka and the Problem of Horse Domestication." *Antiquity* 64.245: 727-740.
- Littauer, M. A. 1977. "Rock-Carvings of Chariots in Transcaucasia, Central Asia and Outer Mongolia." *Proceedings of the Prehistoric Society* 43: 243-262.
- Littauer, M. A. and J. H. Crouwel. 1974. "Terra-cotta Models as Evidence for Vehicles with Tilts in the Ancient Near East." *Proceedings of the Prehistoric Society* 40: 20-37.
- , 1977a. "Chariots with Y-poles in the Ancient Near East." *Archäologischer Anzeiger* (Jahrbuch des Deutschen Archäologischen Instituts. 92. Supplement) 1: 1-8.
- , 1977b. "The Origin and Diffusion of the Cross-Bar Wheel?" *Antiquity* 61: 95-105.
- , 1979. *Wheeled Vehicles and Ridden Animals in the Ancient Near East*. Köln and Leiden.
- , 1986. "The Earliest Known Three-Dimensional Evidence for Spoked Wheels." *American Journal of Archaeology* 90: 395-398.
- Livshic, I. G., ed. 1969. *Skazki i povesti drevnego Egipta* [Fairy Tales and Narratives of Ancient Egypt]. Literaturnye pamjatniki [Literary Monuments]. Leningrad.
- Livshic, V. A. 1969. "K otkrytiju baktrijskix nadpisej na Kara-tepe [On the Discovery of Bactrian Inscriptions in Kara-tepe]." *Buddiiskie peshchery Kara-Tepe v Starom Termeze* [Buddhist Caves on Kara-Tepe, Old Termez]. Ed. B. I. Staviskij. Moscow. 47-81. [With a brief English summary, 180.]
- Livshic, V. A. and A. L. Xromov. 1981. "Sogdijskij jazyk [The Sogdian language]." *Osnovy iranskogo jazykoznanija. Sredneiranskije jazyki* [Foundations of Iranian Linguistics: Middle Iranian languages]. Ed. V. S. Rastorgueva. Moscow. 347-514.

- Lubotsky, A. M. 1988. *The System of Nominal Accentuation in Sanskrit and Proto-Indo-European*. Memoirs of the Kern Institute. Ed. J. C. Heesterman and E. J. M. Witzel. 4. Leiden.
- Lukonin, V. G. 1987. *Drevnij i rannesrednevekovyj Iran: Očerki istorii kul'tury* [Ancient and Early Medieval Iran: Essays in the History of Culture]. Moscow.
- Macalpin, D. W. 1981. "Proto-Elamo-Dravidian: the Evidence and Implications." *Transactions of the American Philosophical Society* 71.3: 63-83.
- Machek, V. 1957. *Etymologický slovník jazyka českého a slovenského* [Etymological Dictionary of the Czech and Slovak Languages]. Prague. [In Czech.]
- Mallory, J. P. 1981. "The Ritual Treatment of the Horse in the Early Kurgan Tradition." *Journal of Indo-European Studies* 9: 205-226.
- . 1996. "The Indo-European Homeland Problem: a Matter of Time." *The Indo-Europeanization of Northern Europe*. Ed. K. Jones-Bley and M. E. Huld. Journal of Indo-European Studies Monographs. 17. 1-22.
- . 1997a. "Indoeuropejskie prarodiny [The Homelands of the Indo-Europeans]." *Vestnik drevnej istorii* [Journal of Ancient History] 1: 61-82. [With English summary.]
- . 1997b. "Dereivka." *Encyclopedia of Indo-European Culture*. Ed. J. P. Mallory and D. Q. Adams. London and Chicago. 156-157.
- Mallory, J. P. and D. Q. Adams, eds. 1997. *Encyclopedia of Indo-European Culture*. London and Chicago.
- Mandelbaum, A., trans. 1981. *The Aeneid*. New York and Toronto.
- Marr, N. Ia. 1922. "'Loshad' || 'ptica', totem urartsko-etrusskogo plemeni i eshche dva etapa ego migracii ['Horse' || 'bird' as a Totem of the Urartian-Etrurian Tribe and the Two Periods of Its Migrations]." *Jafeticheskij sbornik/Recueil Japhetique* 1: 133-136.
- . 1933. *Izbrannye raboty* [Selected Writings]. Vol. 1. Etapy razvitiia jafeticheskoi teorii [Stages in the Development of the Japhetic Theory]. Leningrad.
- . Unpublished. Collection 800, file 692: *Etruski i pelasgi* [Etruscans and Pelasgians]; files 336, 725, 727, 733, 734, 737, 1080, 1128, 1919 A-2791, 2540. Archive of the Russian Academy of Sciences, St. Petersburg. [In Russian and French.]
- Marstrander, C. J. S. 1929. "De gotiskae runeminnesmerker." *Norsk Tidsskrift for sprogvidenskab* 3: 25-157.
- Masson, E. 1967. *Recherches sur les plus anciens emprunts sémitiques en grec*. Paris.
- Matolcsi, J. 1973. "Domestikationsforschung und Geschichte der Haustiere." *Internationales Symposium in Budapest (1971)*. Ed. J. Matolcsi. Budapest.
- Matouš, L. and M. Matoušová-Rajmová. 1984. *Kappadokische Keilschrifttafeln mit Siegeln aus den Sammlungen der Karluniversität in Prag*. Prague.
- Mayrhofer, M. 1959. "Über einige arische Wörter mit hurrischen Suffix." *Istituto Universitario Orientale: Annali AIÖN Sezione linguistica*. Ed. W. Belardi. Naples. 1-14.
- . 1966. *Die Arier im alten Vorderasien*. Wiesbaden.

- . 1974. *Die Arier im Vordenen Orient: ein Mythos?* Österreichische Akademie der Wissenschaften, Philosophisch-Historische Klasse: Sitzungsberichte. 294.1. Vienna.
- . 1979. *Ausgewählte Kleine Schriften*. Wiesbaden.
- . 1982 "Welches Material aus dem Indo-Arischen von Mitanni verbleibt für eine selektive Darstellung?" *Investigationes Philologicae et Comparativae: Gedenkschrift für H. Kronasser*. Ed. E. Neu. Wiesbaden. 72-90.
- Mažiulis, V. 1980-1988. *Prūsų kalbos etimologijos žodynas* [Etymological Dictionary of Old Prussian]. 2 Vols. Vilnius. [In Lithuanian.]
- Meid, W. 1994. "Das Terminologie von Pferd und Wagen im Indogermanischen." Hänsel, B. and S. Zimmer, ed. 1994. *Die Indogermanen und das Pferd: Festschrift für B. Schlerath (Akten des Internationalen interdisziplinären Kolloquiums)*. Ed. B. Hänsel and S. Zimmer. Archaeolingua. 4. Budapest. 53-65.
- Meier-Brügger, M. 1995. "Griechisch (αἰνῶς, Vedisch (ṛj)pyá und Verwandtes." *Historische Sprachforschung* 108.1: 50-55.
- Melchert, H. C. 1989. "PIE 'dog' in Hittite?" *Müncheher Studien zur Sprachwissenschaft* 50: 97-101.
- . 1993a. *Lycian Lexicon*. Vol. 1 of *Lexica Anatolica*. 2nd ed. Chapel Hill, North Carolina.
- . 1993b. *Cuneiform Luwian Lexicon*. Vol. 2 of *Lexica Anatolica*. 2nd ed. Chapel Hill, North Carolina.
- . 1994. *Anatolian Historical Phonology*. Leiden Studies in Indo-European. 3. Amsterdam and Atlanta, Georgia.
- Melikishvili, G. A. 1960. *Uratiskie klinoobraznye nadpisi* [Uratian Cuneiform Inscriptions]. Moscow.
- Mellaart, J. 1981. "Anatolia and the Indo-Europeans." *Journal of the Indo-European Studies* 9.1-2: 135-173.
- Meriggi, P. 1962. *Hieroglyphisch-Hethitisches Glossar*. 2nd ed. Wiesbaden.
- . 1980. "Schizzo grammaticale dell'anatolico." *Atti della Accademia Nazionale dei Lincei (Memorie: Classe di scienze morali, storiche e filologiche)* 8.24.3 (1980): 243-411.
- Meshchaninov, I. I. 1925. "Geograficheskie nazvanija verxov'ev Araksa po xaldskim nadpisjam [Geographical Names of the Araks River-Head According to Urartian Inscriptions]." *Izvestija Rossijskoj Akademii istorii material'noj kul'tury* [Proceedings of the Russian Academy of the History of Material Culture] 4: 43-64.
- . 1935. *Jazyk Vanskoj klinopisi (Die Van-Sprache)* [The Language of Lake Van Cuneiform (= Urartian) Inscriptions]. Vol. 2 (Struktura rechi [Linguistic Structure]). Leningrad.
- . 1962. *Grammaticheskij stroj urartskogo jazyka* [Grammatical Structure of the Urartian Language]. Part 2 (Struktura glagola [The Verbal System]). Moscow and Leningrad.
- . 1978. *Annotirovannyj slovar' urartskogo (biajnskogo) jazyka* [Annotated Dictionary of the Urartian (Biain) Language]. Leningrad.

- Mezhlumjan, S. K. 1965. *Paleofauna epoxi bronzы na territorii Armenii* [Bronze Age Paleofauna in Armenia]. Candidate dissertation in Biological Sciences. Erevan.
- Milewski, T. 1969. *Indoeuropejskie imiona osobowe* [Indo-European Proper Names]. Polska Akademia Nauk: Oddział w Krakowie, Prace Komisji Językoznawstwa. 18. Wrocław. [In Polish.]
- Miller, Vs. F. 1882. *Osetiskie etjudy* [Studies in Ossetic]. Part 2. Moscow.
- Morandi, A. 1984-1985. *Le ascendenze indoeuropee nella lingua etrusca*. 3 vols. Rome.
- Morgenstierne, G. 1945. "Indo-European *k* in Kafiri." *Norsk Tidsskrift for Sprogvidenskab* 13: 225-238.
- . 1974. *Etymological Vocabulary of the Shughni Group*. Wiesbaden.
- Morpurgo Davies, A. and J. D. Hawkins. 1986 "A Luwian Heart." *Anadolu Araştırmaları* 10: 359-372.
- Moscati, S. 1987. *L'Italia prima di Roma*. Milan.
- Muscarella, O. W. 1988. "Appendix 9.1: Comments on the Urkish Lion Pegs." *Mozan 1: Soundings of the First Two Seasons*. G. Buccellati and M. Kelly Buccellati. Bibliotheca Mesopotamica. 20. Malibu. 93-99.
- Nagy, G. 1990. *Greek Mythology and Poetics*. Myth and Poetics. Ithaca and London.
- Napol'skix, V. V. 1996. "Proisxozhdenie ugorskogo nazvanija loshadi [Origin of the Ugrik Word for Horse]." *Linguistica Uralica* 32.2: 116-118. [With English summary.]
- Nardi, B. 1935. "L'Etruria nell'Eneida." *Atti del III Congresso nazionale di Studi Romani* 4.
- Nemirovskij, A. I. 1978. "Katalog etrusskix korablej v Eneide [Catalogue of the Etruscan Ships in the Aeneid]." *Vestnik drevnej istorii/Revue des études anciennes* 1: 142-148.
- . 1983. *Etruski: Ot mifa k istorii* [Etruscans. From Myth to History]. Moscow.
- Nemirovskij, M. Ia. 1930. "Alfred Trombetti, jego zhizn' i nauchnye trudy po sravnitel'nomu jazykovedeniju, po obshchej i kavkazskoj lingvistike [Alfred Trombetti, sa vie et ses oeuvres]." *Izvestija Gorskogo Pedagogicheskogo instituta* [Proceedings of the Caucasian Pedagogical Institute]. Vladikavkaz. 215-249.
- Neu, E. 1974. *Der Anitta-Text*. Studien zu den Boğazköy-Texten. 18. Wiesbaden.
- . 1980. *Althethitische Rituale in Umschrift*. Studien zu den Boğazköy-Texten. 25. Wiesbaden.
- . 1983. *Glossar zu den althethitischen Ritualtexten*. Studien zu den Boğazköy-Texten. 26. Wiesbaden.
- . 1988. "Varia hurritica: Sprachliche Beobachtungen an der hurritisch-hethitischen Bilingue aus Hattuša." *Documentum Asiae Minoris Antiquae: Festschrift für H. Otten zum 75. Geburtstag*. Ed. E. Neu and C. Rüster. Wiesbaden. 235-254.
- . 1996. *Das Hurritische Epos der Freilassung I: Untersuchungen zu einem hurritisch-hethitischen Textensemble aus Hattuša*. Studien zu den Boğazköy-Texten. 32. Wiesbaden.

- Neumann, G. 1979. "Namen und Epiklesen lykischer Götter." *Florilegium Anatolicum: Mélanges offerts à E. Laroche*. Paris. 259-271. [Reprinted in Neumann 1994, 178-190.]
- . 1994. *Ausgewählte Kleine Schriften*. Ed. E. Badalı, H. Nowicki, and S. Zeilfelder. Innsbruck.
- Nikolayev, S. L. 1985. "Severokavkazskie zaimstvovaniya v xettskom i drevnegrecheskom [North Caucasian Loanwords in Hittite and Ancient Greek]." *Drevnjaja Anatolija [Ancient Anatolia]*. B. B. Piotrovskij. Moscow. 60-73. [With short English summary, 250.]
- Nikolayev, S. L. and S. A. Starostin. 1994. *A North Caucasian Etymological Dictionary*. Moscow.
- Noettes, L. de. 1931. *L'Attelage, le cheval de selle à travers les ages*. Paris.
- Nozadze, N. A. 1978. *Voprosy struktury xurritskogo glagola [Problems of the Structure of the Hurrian Verb]*. Tbilisi.
- Oettinger, N. 1979. *Die Stammbildung des hethitischen Verbums*. Erlanger Beiträge zur Sprach- und Kunstwissenschaft. 64. Nuremberg.
- Olzscha, K. 1968. "Einige etruskische Formen auf -cva und -chva." *Gedenkschrift W. Brandenstein*. Ed. M. Mayrhofer, F. Lochner-Hütternbach, and H. Schmeja. Innsbruck. 191-196.
- Oranskij, I. M. 1979. *Iranskie jazyki v istoricheskom osveshchenii [Historical Survey of Iranian Languages]*. Moscow.
- Orel, V. and S. Starostin. 1989. "Etruscan and North Caucasian." *Explorations in Language Macrofamilies*. Ed. V. Shevoroshkin. Bochum Publications in Evolutionary Cultural Semiotics. 23. Bochum.
- Otten, H. 1952-1953. "Pirva: der Gott auf dem Pferde." *Jahrbuch für kleinasiatische Forschung* 2.2: 62-73.
- . 1953a. *Zur grammatikalischen und lexikalischen Bestimmung des Luvischen: Untersuchung des Luwili-Texte*. Deutsche Akademie der Wissenschaften zu Berlin, Institut für Orientforschung: Veröffentlichung. 19. Berlin.
- . 1953b. *Luvische Texte in Umschrift*. Deutsche Akademie der Wissenschaften zu Berlin, Institut für Orientforschung: Veröffentlichung. 17. Berlin.
- Østmo, E. 1997. "Horses, Indo-Europeans and the Importance of Ships." *Journal of Indo-European Studies* 25.3-4: 285-326.
- Pallottino, M. 1980. *Etruscologia*. Repr. of 6th ed. Milan.
- Panagl, O. 1985. "Hippologia mycenaea." *Sprachwissenschaftliche Forschungen: Festschrift für J. Knobloch*. Ed. H. M. Ölberg, G. Schmidt, and H. Bothien. Innsbrucker Beiträge zur Kulturwissenschaft. 23. Innsbruck. 283-292.
- Parrot, A. and J. Nougayrol. 1948. "Un document de fondation hourrite." *Revue d'assyriologie et d'archéologie orientale* 42: 1-20.
- Pecorella, P. E. and M. Salvini. 1982. *Tell Barri/Kahat 1*. Rome.
- Peiros, I. and S. Starostin. 1996. *A Comparative Vocabulary of Five Sino-Tibetan Languages*. Fasc. 1 (Labials). Melbourne.

- Perixanjan, A. G. 1973. *Sasanidskij sudebnik* [The Sassanid Code]. Kniga tysjachi sudebnnyx reshenij [Mātakdān i hazār dāstān]. Erevan.
- . 1983. *Obščestvo i pravo Irana v parfjanskij i sasanidskij periody* [Society and Law in Iran in the Sassanid and Parthian Periods]. Moscow.
- Perotti, P. A. 1990. "De diis in Aeneide." *Latinitas* 38.1: 10-24.
- Pettinato, G. 1987. "Dieci anni di studi epigrafici su Ebla." *Ebla 1975-1985: Dieci anni di studi linguistici e filologici* (Atti del convegno internazionale). Ed. L. Cagni. Istituto Universitario orientale, Dipartimento di studi asiatici, Series Minor. 27. Naples. 1-35.
- Piggott, S. 1968. "The Beginnings of Wheeled Transport." *Scientific American* 219.1: 82-90.
- . 1969. "The Earliest Wheeled Vehicles and the Caucasian Evidence." *Proceedings of the Prehistoric Society* 34, 266-318.
- . 1974. "Chariots in the Caucasus and in China." *Antiquity* 48.189: 16-24.
- . 1979. "The First Wagons and Carts: Twenty-Five Years Later." *Bulletin of the Institute of Archaeology* 16: 3-17.
- . 1983. *The Earliest Wheeled Transport: From the Atlantic Coast to the Caspian Sea*. Ithaca.
- . 1992. *Wagon, Chariot and Carriage*. New York.
- Piotrovskij, B. B. 1962a. "Urartskaya kolesnica [Le char d'Ourartou]." *Drevnij mir: Sbornik statej*: V. V. Stuve-Festschrift. Ed. N. V. Pigulevskaya a.o. Moscow. 340-343. [In Russian with a French table of contents.]
- . 1962b. *Iskusstvo Urartu* [The Art of Urartu]. Leningrad.
- , ed. 1985. *Drevnjaja Anatolija* [Ancient Anatolia]. Moscow.
- Pisani, V. 1959. *Saggi di linguistica storica: scritti scelti*. Turin.
- . 1979. "Lexistorica: Latino asinus, greco ὄνος e l'Anatolia." *Studia Mediterranea P. Meriggi dicata II*. Ed. O. Carruba. Pavia. 495.
- Plath, R. 1994. "Pferd und Wagen im Mykenischen und bei Homer." *Die Indogermanen und das Pferd: Festschrift für B. Schlerath* (Akten des Internationalen interdisziplinären Kolloquiums). Ed. B. Hänsel and S. Zimmer. *Archaeolingua*. 4. Budapest. 103-114.
- Poghirc, C. 1983. *Philologica et linguistica: Ausgewählte Aufsätze (1953-1983)*. Bochum.
- Pokorny, J. 1948-1949. "Zur keltischen Namenkunde und Etymologie." *Vox Romanica* 10.
- . 1959. *Indogermanisches Etymologisches Wörterbuch*. Bern.
- Polivanov, E. D. 1928. *Vvedenie v jazykoznanie dlja vostočovednyx vyzov* [An Introduction to the Science of Language for High Schools of Oriental Studies]. Leningradskij vostočnyj institut im. A. S. Erukidze [A. S. Erukidze Oriental Institute, Leningrad]. 31. Leningrad. [In Russian; English preface published separately from reprint of 1929.]
- . 1968. *Statij po obščemu jazykoznaniju* [Articles in General Linguistics]. Moscow. [In Russian; English translation, The Hague and Paris.]
- Porzig, W. 1954. *Die Gliederung des Indogermanischen Sprachgebiets*. Heidelberg.
- Potratz, H. A. 1938. *Das Pferd in der Frühzeit*. Rostock.

- Puhvel, J. 1984. *Hittite Etymological Dictionary*. 2 Vols. Trends in Linguistics: Documentation. 1. Ed. W. Winter. Berlin.
- . 1987. *Comparative Mythology*. Baltimore.
- Rajevskij, D. S. 1977. *Očerki ideologii skifsko-sarmatskix plemen: Opyt rekonstrukcii skifskoj mifologii* [Essays on the Ideology of Scythian-Sarmatian Tribes: an Attempt at Reconstructing Scythian Mythology]. Moscow.
- . 1985. *Model' mira skifskoj kul'tury: Problemy mirovozzrenija iranoazychnyx narodov evrazijskix stepej i tysjacheletija do n.e.* [World Patterns in Scythian Culture: Iranian Peoples of the Eurasian Steppes in 1 mill. B.C.: World View]. Moscow. [English summary, 253-255.]
- Rastorgueva, V. S., ed. 1981. *Osnovy iranskogo jazykoznanija. Sredneiranskije jazyki* [Foundations of Iranian Linguistics: Middle Iranian languages]. Moscow.
- Rauh, H. 1981. *Knochenfunde von Säugetieren aus dem Demircihöyük*. Dissertation. Munich.
- Rawson, E. 1978. "Caesar, Etruria and the *Disciplina Etrusca*." *Journal of Roman Studies* 68: 132-152.
- Reichert, H. 1978. *Awestisches Elementarbuch*. Reprint. Heidelberg.
- Riemschneider, K. K. 1973. *Lehrbuch des Akkadischen*. 2nd. ed. Leipzig.
- Ringe, Don, Jr. 1996. *On the Chronology of Sound Changes in Tocharian*. Vol. 1. of *From Proto-Indo-European to Proto-Tocharian*. American Oriental Series. 80. New Haven.
- Rix, H. 1963. *Das Etruskische Cognomen*. Wiesbaden.
- Rosenberg, A. 1913. *Der Staat der alten Italiker: Untersuchungen über die ursprüngliche Verfassung der Latiner, Osker und Etrusker*. Berlin.
- Rosenkranz, B. 1952. *Beiträge zur Erforschung des Luvischen*. Wiesbaden.
- . 1978. *Vergleichende Untersuchungen der altanatolischen Sprachen*. Trends in Linguistics: State-of-the-Art Reports. 8. Ed. W. Winter. The Hague.
- Rudenko, M. B. 1982. *Kurdskaia obrjadovaja poezija (Poxoronnye prichitanija)* [Kurd Ritual Poetry (Funerary Lamentations)]. Moscow.
- Ruijgh, C. J. 1995. "Observations sur les voyelles d'appui en proto-indo-européen et en grec ancien." *Kurylowicz Memorial Volume, Part One*. Ed. W. Smoczyński. Cracow. 345-356.
- Rüter, C. and E. Neu. 1989. *Hethitisches Zeichenlexikon: Inventar und Interpretation der Keilschriftzeichen aus den Boğazköy-Texten*. Studien zu den Boğazköy-Texten. 2. Wiesbaden.
- Salvini, M. 1977. "Sui testi mitologici in lingua hurrica." *Studi micenei ed egeo-anatolici* 18 (*Incunabula graeca* 67): 73-92.
- Sayce, A. H. 1929. "The Linguistic Position of Hittite." *Donum natalicium Schrijnen*. Nijmegen and Utrecht.
- Semenov, S. A. 1974. *Proisxozhdenie zemledelija* [Origin of Agriculture]. Leningrad.
- Sherratt, A. G. 1983. "The Secondary Exploitation of Animals in the Old World." *World Archaeology* 15: 90-104.

- , 1986. "Wool, Wheels and Ploughmarks: Local Developments or Outside Introductions in Neolithic Europe?" *London Institute of Archaeology Bulletin* 23: 1-15.
- Sheratt, A. G. and S. Sheratt. 1988. "The Archaeology of Indo-European: An Alternative View." *Antiquity* 62 (236): 584-595.
- Shevoroshkin, V. 1965. *Issledovanija po deshiurovke karijskix nadpisej* [Studies in the Decipherment of the Carian Inscriptions]. Moscow.
- Shilejko, V. K. 1921. "Dokumenty iz Giul'-Tepe [Documents from Giul'-Tepe]." *Izvestija Rossijskoj Akademii Istorii Material'noj kul'tury* [Proceedings of the Russian Academy of the History of Material Culture] 1.28: 356-364.
- Sokolova, V. S. 1953. *Očerki po fonetike iranskix jazykov II. Osetinskij, jagnobskij i pamiirskie jazyki* [Essays in the Phonetics of Iranian languages II: Ossetic, Yagnobi and Pamirian Languages]. Moscow and Leningrad.
- , 1967. *Geneticheskie otnoshenija jazguljamskogo jazyka i shugnanskoj jazykovoj grupy* [Genetic Connections between the Yazguljam Language and the Shugni Linguistic Group]. Leningrad.
- , 1973. *Geneticheskie otnoshenija mundzhanskogo jazyka i shugnano-iazguljamskoj grupy* [Genetic Connections between the Mundzhan Language and the Shugnan-Yazguljam Group]. Leningrad.
- Sommer, F. and H. Ehelolf, eds. 1930. *Kleinasiatische Forschungen*. Vol. 1.3. Weimar.
- Sordi, M. 1964. "Vergilio e la storia romana del IV secolo." *Athenaeum* 42.
- , 1989. *Il mito troiano e l'eredità etrusca di Roma*. Milan.
- Speiser, E. 1941. *Introduction to Hurrian*. Annual of the American School of Oriental Research. 20. New Haven.
- Spruytte, J. 1977. *Études expérimentales sur l'attelage: contributions à l'histoire du cheval*. Paris.
- Starke, F. 1985. *Die Keilschrift-luwischen Texte in Umschrift*. Studien zu den Boğazköy-Texten. 30. Wiesbaden.
- , 1990. *Untersuchung zur Stammbildung des keilschrift-luwischen Nomens*. Studien zu den Boğazköy-Texten. 31. Wiesbaden.
- , 1995. *Ausbildung und Training von Streitwagenpferden: ein hippologisch orientierte Interpretation des Kikkuli-Textes*. Studien zu den Boğazköy-Texten. 41. Wiesbaden.
- Starostin, S. A. 1985. "Kul'turnaia leksika v obshcheseverokavkazskom slovarnom fonde [Cultural Words in the Common North Caucasian Lexical Stock]." *Drevnjaja Anatolija* [Ancient Anatolia]. Ed. B. B. Piotrovskij. Moscow. 74-94. [Brief English summary, 250-251.]
- , 1987. *Kommentarii k kavkazovedcheskim rabotam Trubetzkogo: Trubetzkoy 1922-1930* [Comments on Trubetzkoy's Works on Caucasian: Trubetzkoy 1922-1930]. *Izbrannye trudy po filologii* [Selected Philological Works]. N. S. Trubetzkoy. Moscow. 437-447; 453-465.
- , 1988. "Indoeuropejsko-severokavkazskie izoglossy [Indo-European and North Caucasian Isoglosses]." *Drevnij Vostok: Etno-kul'turnye sojazy* [The Ancient

- East: Ethnocultural Connections]. Vol. 80. Ed. G. M. Bongard-Levin and V. G. Ardzinba. Moscow. 112-163.
- . 1995a. "Neskol'ko novyx xurritskix etimologij [New Hurrian Etymologies]." *Vestnik drevnei istorii/Revue des études anciennes*: 133-136. [With brief English summary.]
- . 1995b. "Sravnitel'nyj slovar' ienissejskix jazykov [Comparative Yeniseyan Dictionary]." *Ketskij sbornik: Lingvistika [Studia Ketica: Linguistics]* IV: 176-315. [With brief English summary.]
- . 1998. "Hurro-Caucasica." *V. N. Toporov Festschrift*. Moscow.
- Steblin-Kamenskij, I. M. 1981. "Baktrijskij jazyk [The Bactrian Language]." *Osnovy iranskogo jazykoznanija. Sredneiranskije jazyki [Foundations of Iranian Linguistics: Middle Iranian languages]*. Ed. V. S. Rastorgueva. Moscow. 314-346.
- . 1982. *Očerki po istorii leksiki pamirskix jazykov: Nazvanija kul'turnyx rastenij [Studies in the History of the Vocabulary of the Pamirian Languages: Names of Domesticated Plants]*. Moscow.
- . 1985. "Nazvanie paxotnogo orudija v pamirskix jazykax [Name of the Ploughing Tool in Pamirian languages]." *Iranskoe jazykoznanie, Ezhegodnik [Annual of Iranian Linguistics]* (1981): 154-170.
- Struve, V. V. 1925. "Loshadi v misterijax Osirisa [Horses in the Mysteries of Osiris]." *Jafeticheskij sbornik/Recueil Japhétique* 3: 71-74.
- Szemerényi, O. 1974. "The Origins of the Greek Lexikon: Ex Oriente Lux." *Journal of Hellenistic Studies* 94: 144-157.
- . 1976. "The Problem of Aryan Loanwords in Anatolian." *Scritti in onore di Giuliano Bonfante*. Vol. 2. Brescia. 1063-1070.
- . 1994. "Etyma Graeca: VII:35: Artemis." *Indogermanica et Caucasica: Festschrift K. H. Schmidt*. Ed. R. Bielmeyer and R. Stempel. Berlin and New York. 211-222.
- Telegin, D. T. 1986. "Dereivka: a Settlement and Cemetery of Copper Age Horse-Keepers on the Middle Dnieper." *BAR International*: 287.
- . 1995. "Ob absolutnom vozraste Dereivskogo poselenija i mogil'nika na Srednem Dnepe [On the Absolute Age of the Dereivka Village and Graves on the Middle Dnieper River]." *Early Horsekeepers of the Eurasian Steppes: International Conference*. Petrozavosk.
- Temporini, H., ed. 1972. *Aufstieg und Niedergang des Römischen Welt*. Vol. 1. Berlin and New York.
- , ed. 1981. *Aufstieg und Niedergang des Römischen Welt*. Vol. 2.17. Berlin and New York.
- Thomsen, V. 1899. "Remarques sur la parenté de la langue étrusque." *Bulletin de l'Académie Royale des sciences et des lettres de Danemark* 24: 373-398. [Also reprinted in his *Complete Works*.]
- Thumb, A. 1958. *Handbuch des Sanskrit*. Vol. 1 (Grammatik: 1. Einleitung und Lautlehre). 3rd ed. Heidelberg. [Redone by R. Hauschild.]
- Thurneysen, R. 1946. *A Grammar of Old Irish*. Dublin.

- Timofeeva, N. K. 1980. Religiozno-mifologicheskaja kartina mira etruskov [The Religious-Mythological View of the World among the Etruscans]. Novosibirsk.
- Toporov, V. N. 1975-1984. *Prusskij jazyk: Slovar'* [Old Prussian Language: Dictionary]. 3 vols. Moscow.
- . 1993. *Enei: chelovek sud'by* [Aeneas: a Man of Destiny]. Moscow. [In Russian with a detailed English summary (on the 'Mediterranean' psychology), 167-194.]
- Trifonov, V. A. 1987. "Nekotorye voprosy peredneaziatskix svjazej majkopskoj kul'tury [Some Questions about the Near Eastern Connections of the Maikop Culture]." *Institut arxeologii Akademii Nauk SSSR, Kratkie soobshchenija* [Institute of Archaeology of the USSR Academy of Sciences, Brief Summaries] 192: 18-26.
- . 1994. *The Caucasus and the Near East in the Early Bronze Age (Fourth and Third millennia B.C.)*. Oxford Journal of Archaeology. 13.3. Oxford.
- Trombetti, A. 1928. *La lingua etrusca*. Florence.
- Trubetzkoy, N. S. 1922. "Les consonnes latérales des langues Caucasiques-Septentrionales." *Bulletin de la Société de linguistique* 23.72: 184-204. [Russian translation in Trubetzkoy 1987, 233-246.]
- . 1930. "Nordkaukasische Wortgleichungen." *Wiener Zeitschrift für die Kunde des Morgenlandes* 37.2: 76-92. [Russian translation in Trubetzkoy 1987, 271-282.]
- . 1987. *Izbrannye trudy po filologii* [Selected Philological Works]. Moscow.
- Turner, R. L. 1989. *A Comparative Dictionary of the Indo-Aryan Languages*. Reprint. London.
- Uerpmann, H.-P. 1990. "Die Domestikation des Pferdes in Chalkolithicum West- und Mitteleuropas." *Madrid Forschungen* 31: 109-142.
- . 1995. "Domestication of the Horse: When, Where and Why." *Colloque d'histoire des connaissances zoologiques (Le cheval et les autres équidés: aspects de l'histoire de leur insertion dans les activités humains)* 6: 15-29.
- Vanagas, A. 1981. *Lietuvių hidronimų etimologinis žodynas* [Etymologisches Wörterbuch der Litauischen Hydronyme]. Vilnius. [In Lithuanian with prefaces in Russian and German.]
- Van Windekens, A. J. 1970. "Études de phonétique tokharienne XIII: le traitement des groupes indo-européens se composant d'une palatale ou d'une vélaire + *w." *Orbis* 19.1: 108-123.
- . 1975. "Les termes 'chien' et 'cheval' en indo-européen." *Indogermanische Forschungen* 80: 62-65.
- . 1976. *Le tokharien confronté avec les autres langues indo-européennes*. Travaux publiés par le Centre International de Dialectologie Générale de l'Université Catholique Néerlandaise de Louvain. Fasc. 11. Louvain.
- Vasiljev, I. B. and A. T. Siniuk. 1985. *Eneolit Vostochnoevropejskoj lesostepi* [The Eneolithic Age of the Eastern European Forest-Steppe Region]. Kujbyshev.
- Vasmer, M. 1923. *Untersuchungen über die ältesten Wohnsitz der Slawen*. Vol. 1 (Die Iranier in Südrussland). Leipzig.
- Ventris, M. and J. Chadwick. 1973. *Documents in Mycenaean Greek*. 2nd ed. Cambridge.

- Vernant, J.-P. 1986. *La mort dans les yeux: figures de l'autre en Grèce ancienne: Artémis, Gorgô*. Collection Textes de XXe siècle. Évreux [Eure].
- . 1988. *Mythe et société en Grèce ancienne*. Fondations. Paris.
- . 1989. *L'individu, la mort, l'amour: soi-même et l'autre en Grèce ancienne*. Bibliothèque des histoires. Paris.
- Villar, F. 1991. *Los indoeuropeos y los orígenes de Europa: lenguaje e historia*. Madrid.
- Vine, B. H. 1993. *Studies in Archaic Latin Inscriptions*. Innsbrucker Beiträge zur Sprachwissenschaft. 75. Innsbruck.
- Wachter, R. 1987. *Altlateinische Inschriften*. Bern/Frankfurt am Main/New York/Paris.
- Wackernagel, J. 1905. *Altindische Grammatik*. Vol. 2.1 (Einleitung zur Wortlehre, Nominalkomposition). Göttingen.
- Watkins, C. 1985. *The American Heritage Dictionary of Indo-European Roots*. Boston.
- . 1995. *How to Kill a Dragon: Aspects of Indo-European Poetics*. New York and Oxford.
- Wegner, I. 1981. *Gestalt und Kult der Istar-Sawuska in Kleinasien*. Alter Orient und Altes Testament. 36. Hurritologische Studien. 3. Neukirchen und Vluyn.
- . 1995. "Die hurritische Körperteilbezeichnungen." *Zeitschrift für Assyriologie und Vorderasiatische Archäologie* 85: 116-126.
- Wiesner, J. 1939. "Fahren und Reiten in Alteuropa und im Alten Orient." *Der Alte Orient* 28: 48-92.
- Wilhelm, G. 1970. "ta/erdennu, ta/urtannu, ta/urtānu." *Ugarit-Forschungen* 2: 277-282.
- . 1989. *The Hurrians*. Warminster, England.
- . 1992. "Hurritische Lexikographie und Grammatik: die hurritisch-hethitische Bilingue aus Boğazköy." *Orientalia* 61.2: 122-141.
- . 1998. "Die Inschrift des Tišatal von Urkeš." *Urkeš and the Hurrians: Studies in Honor of Lloyd Cotsen*. Ed. G. Buccellati and M. Kelly-Buccellati. Urkeš/Mozan Studies. 3. Bibliotheca Mesopotamica. 26. Malibu. 117-144.
- Williams-Forte, E. 1983. "Annotations of the Art." *Inanna, Queen of Heaven and Earth: Her Stories and Hymns from Sumer*. D. Wolkstein and S. N. Kramer. New York. 174-199.
- Wolf, S. A. 1989. *Grosses Wörterbuch der Zigeunersprache (Romani Tšiw): Wortschatz deutscher und anderer europäischer Zigeunerndialekte*. Hamburg.
- Wolkstein, D. 1983. "Interpretations of Inanna's Stories and Hymns." *Inanna, Queen of Heaven and Earth: Her Stories and Hymns from Sumer*. D. Wolkstein and S. N. Kramer. New York. 136-173.
- Wolkstein, D. and S. N. Kramer. 1983. *Inanna, Queen of Heaven and Earth: Her Stories and Hymns from Sumer*. New York.
- Xachikian, M. (= Khačikyan, M.) 1985a. *Xurritskij i urartskij jazyki* [The Hurrian and Urartian Languages]. *Xurriti i urarty* [Hurrians and Urartians]. 2. Erevan.
- . 1985b. "Zametki po xurritskoj i urartskoj grammatike II [Notes on Hurrian and Urartian Grammar II]." *Drevnjaja Anatolija* [Ancient Anatolia]. Ed. B. B. Piotrovskij. Moscow. 22-25. [English summary, 249.]

- Xazanov, A. M. 1985. "Legenda o proisxozhdenii skifov (Gerodot, IV, 5-7) [Legend about the Origin of Scythians]." *Skifskij mir [The Scythian World]*. Ed. A. I. Terenozhkin a.o. Kiev. 74-93.
- Xromov, A. L. 1972. *Yagnobskij jazyk [The Yagnobi Language]*. Moscow.
- Zarins, J. 1979. Rev. of *Korocutepe: Final Report on the Excavations*. *Journal of Near Eastern Studies* 38.1: 58-60.
- Zdanovich, G. B. 1988. *Bronzovyj vek Uralo-Kazaxskix stepej: osnovy periodizacii [The Bronze Age of the Ural-Kazakhstan Steppes: Fundamentals of Periodization]*. Sverdlovsk.
- Zgusta, L. 1955. *Die Personennamen Griechischer Städte der Nördlichen Schwarzmeerküste: die ethnischen Verhältnis der Skythen und Sarmaten, im Lichte der Namenforschung*. Prague.
- . 1964. *Kleinasiatische Personennamen*. Prague.
- Zimmer, S. 1994. "Die Indogermanen und das Pferd: Befunde und Probleme." *Die Indogermanen und das Pferd: Festschrift für B. Schlerath (Akten des Internationalen interdisziplinären Kolloquiums)*. Ed. B. Hänsel and S. Zimmer. *Archaeolingua*. 4. Budapest.

An Ancient Name of the Lyre

Vyacheslav V. Ivanov

One of the most amazing lexical insights of Hrozný in his *Die Sprache der Hethiter* may be seen in his Semitic etymology of a Hittite musical term that he discovered. While discussing the use of the logogram LÚNAR "singer, musician", he established that in KBo I 52 obv. 15-16 after the ideogram a noun that we now read as LÚki-nir-tal-la-aš¹ follows, which he characterized as "synonym oder zumindest bedeutungsverwandt" in respect to the first one. He defined this Hittite word as the name of a profession related to Hebrew *kinnôr* "string instrument, harp, lyre" and to corresponding words in Aramaic, Syriac, Ancient Egyptian and also to the Greek word κινύρα. Hrozný thought that the Hittite noun contained a suffix ending in -la-, and that the word (which we would now read as *kinirtallaš*) might be translated approximately as "der (Mann) der Zither" (ib.). Subsequent Hittitological studies have confirmed this hypothesis, adding as support the equivalence seen in the mixed spelling LÚNAR-li, KUB XX 43, 13. Friedrich continued the same interpretation as "Art Musiker; Zitherspieler" (?). The correspondence to the Hebrew term seemed established, but according to Friedrich the Hittite word "enthält wohl ein Kulturwort unbekannten Ursprungs für 'Zither'".²

The word in question was spread with the instrument itself from the Western Semitic area no later than the middle of the III mil. B.C.³

The oldest evidence from the cuneiform archives of Ebla (Northern Syria) dates from the second half of the XXIVth c. B.C. In a list of words from

¹ Hrozný (1916, p. 52, fn. 1; the date 1916 on the title page of the first Lieferung is not usually taken into consideration in modern bibliographies, which instead give the date as 1917, referring to the complete edition of the whole book) read the third sign as -ri-, which is quite possible in general (Rüster, Neu 1989, p. 105, N 32), but wrong in this particular case. Accordingly his understanding of the form of the suffix was not correct.

² Friedrich 1952, p. 110 (with other Hittitological references).

³ Lawergren 1998; Norborg 1995.

around 2340-2300 B.C., a Western Semitic word *kinnārum* is attested, which corresponds to the Biblical Hebrew name of the lyre *kinnōr*: GI(=ki)-na-ru₁₂-um/rum/lum = Sumerian BALAG.⁴ Although the exact meaning of the corresponding Sumerian noun remains disputable, the translation "lyre, harp" for the Eblaite term seems definite. The early date of the attestation may be compared to musicological data on the Western Semitic origin of the sloped lyre.⁵ Although the term is attested in several Semitic languages, it seems indigenous only in Western Semitic.⁶ Around 1700 B.C. the term *kinnārum* is found in Mari in a text about two craftsmen supplying lyres for the king. Another derivative (semantically similar to the Hittite one) from this borrowed migratory cultural word is found in Alalakh in 1500-1400. There the word *LUki-in-na-ru-hu-li* "lyre-player"⁷ is built with the Hurrian suffix *-huli* designating a profession; the form *ki-na-ra-a-i* appears in the Hurrian ritual for Tašmišari (KUB XLVII 40 + XXVII 25).⁸ The word *kinnara-* in a cuneiform syllabic spelling (similar to that in Ebla and Mari) is also used in a cuneiform tablet with a Hurrian song from Ugarit. It has been supposed that in Ugarit the god of the lyre *Kinnāru* is attested.⁹ In Ugarit in Western Semitic Ugaritic texts the word appears as *knr* together with other names of musical instruments.¹⁰ The spread of the term to the Southern part of the civilized world of the II mil. B.C. is seen in Egyptian *knrr*, attested after the Amarna period.¹¹ As shown by Leopold Vorreiter in his study on *Riesenlyren des Altertums*, all of the Egyptian large lyres similar to the earlier Ancient Oriental ones are found

⁴ Pettinato 1982, p. 264, N 572; Lambert 1989, p. 30.

⁵ Vorreiter 1972/1973; 1972.

⁶ See bibliography in: Ellenbogen 1962, pp. 86-87; Lambert 1989, p. 30; CAD, vol. 7: I and J, p. 387.

⁷ Laroche 1980, p. 149.

⁸ Haas 1984, pp. 271-274.

⁹ Von Soden 1994, p. 245. This possibility is not mentioned in Gordon 1967.

¹⁰ See on the text RŠ 24.252: Gordon 1967, p. 421, N 1274. At this point in his textbook Gordon also mentions Akht C 19 (= RŠ 3.66 = KTU, I.19, I:8). But the interpretation of the form *knr* as "lyre" for this line is doubtful: Shifman 1993, pp. 182, 257.

¹¹ Ziegler 1979, pp. 116-117.

in Amarna at the time of Amenophis IV (Akhanayatin), i.e. 1350-1333 B.C. They may be considered one of those numerous elements of the new monotheistic Sun cult that can be connected with Near Eastern (probably Western Semitic-Canaanite and/or Hurrian¹²) influence. An Ethiopian name of a lyre *kerar* < **kenar*¹³ is connected to the more Southern-Eastern cultural area of Africa.

The same term seems to appear in some languages (mostly of the more Northern area) with an initial *z*- evidently going back to a palatalized form of the **k*- in the position before the front vowel *i*. The oldest form of this type is attested in Hattic (already a dead language by the beginning of the II mil. B.C.): Hat. *hun-zinar* "large stringed instrument, harp", probably designating a large lyre of a type attested in Asia Minor in Alaça Hüyük already in the second half of the III mil. B.C. The Hat. term is probably related to North-Western Caucasian Adygh *pšine-šxuo* "harp" (with the reverse order of the same elements), just as Hat. *ippi-zinar* "small lyre" is etymologically identical to Adygh *lepe-pšin* "lyre, harp", Kabardian *lepe pšine* "a stringed instrument for the fingers, accordion, balalaika".¹⁴ These etymologies show that the term in this palatalized form had already spread at the time when Hattic still had (original or migratory) lexical contacts with (Proto-?) North-Western Caucasian (no later than the III mil. B.C.). Also in the Caucasus, a term *ĵnar* is found in medieval Old Armenian texts, which is linked to the same Hattic term,¹⁵ although the voiced character of the initial affricate (usually coming

¹² Leopold Vorreiter (1979a, pp. 33-34) has pointed to the similarity of a large sloped lyre from Amarna and a Hurrian one from Mardin (the area of Lake Van).

¹³ Duchesne-Guillemin 1989.

¹⁴ Ivanov 1982, pp. 160-161; 1985, pp. 41, 42, 49, NN 9, 13, 75.

¹⁵ First established in Mkrtšjan 1974, p. 316. On the Old Armenian term in its relation to the Western Semitic one see: Achaïan 1979, p. 129; Dzhauxyan 1967, p. 304; on the appearance of the corresponding musical instrument: cf. Gevorgian 1973, pp. 17, 20. If Old Armenian *k'nar* "zither" comes from Middle Western Iranian *kun(n)ār* (Bolognesi 1980, p. 28), this later loan-word would coexist with an older one in Old Armenian, just as different words coming from this lyre name coexist in Hittite texts.

from Indo-European **g^{wh}*) seems peculiar (for Hattic, the voicing may not be shown in initial position in the cuneiform notation).

In Hattic texts the word *zinar* occurs only in these two compounds, but in Hittite rituals the word *zinir* is used very often in the meaning "music". In many cases it is given as an announcement of a court official¹⁶ who might have spoken in the sacred language Hattic. At the same time the term might have been borrowed from Hattic, having acquired a broader meaning, as is not uncommon in loanwords.

It can be supposed that a borrowing from a similar source is also present in Akkadian *zannaru*, which denoted the lyre as an instrument of the goddess Ishtar/Inanna;¹⁷ this form is used in a local copy of the Sumerian-Akkadian list of the vocabulary in Meskene/Emar.¹⁸ The form *zannar(u)* presents two interesting phonetic points. In addition to having an initial *z*-resulting from a palatalized **k-* (like the Hattic forms and the Old Armenian one), it presents a non-front vowel *a* that should go back to a former front vowel that had caused the palatalization, i.e. **i* or **e* (in Hittite and some other languages of the area, these two phonemes or the cuneiform syllabic signs expressing them are mixed up, probably reflecting a change **e > i*). These two features make it possible to suggest a Luwian origin for the word. But in Luwian, it is usually labiovelars that were palatalized before front vowels;¹⁹ thus one should suppose that an original Western Semitic migratory term had been borrowed into a Proto-Luwian dialect (no later than the III mil. B.C.)

¹⁶ See the contexts in: Badali 1998, pp. 28, 38, 79, 261.

¹⁷ Landsberger 1958, pp. 119, 123, 142. On the term "stringed instrument of Inanna" in Hittite texts see also: de Martino 1988, pp. 7, 11, 13.

¹⁸ Gurney, Lawergren 1988.

¹⁹ Ivanov 1999. A suggestion about the possible Luwian origin of the Hattic forms of the lyre terms was mentioned, but discounted immediately, by Lawergren 1998, p. 59, where the linguistic data were not discussed in detail. As another possibility, one may think of a borrowing of the term into Proto-Luwian before the *satəm* change of **k' - > z-*; on the whole problem of the *satəm*-type words common to Luwian and other non-Indo-European languages belonging to the North-Caucasian family, see the author's article "Comparative Notes ..." in the present volume.

with a labiovelar **kʷ* < W. Semitic **k*, and was palatalized before a front vowel **e/i* that later developed into *a*. A similar process can be suggested for Old Armenian, where an early change to a voiced labiovelar might have occurred due to a contamination with an original Indo-European term **gʷhen-*, cf. the semantically similar onomatopoeic root in Slavic **zve/on-* "to sound, to ring", Baltic *žve/an-* (> Lithuanian *žvangėti* "to ring") < IE **gʰwen-*; cf. also a phonosemantic "ideophonic" correspondence in Latin *sonus*, *sonāre* : Sanskrit *svana-* < IE **swenH-*.²⁰ A similar process might also have occurred in Luwian, but the voiced character of an initial consonant cannot be seen in the cuneiform writing. If these suggestions are accepted one could suggest a borrowing of a Luwian form with initial *z-* < **kʷ/gʷ-* into Hattic (again not later than the III mil. B.C.). But not all forms with an initial palatalized velar and affricate or spirant resulting from palatalization need go back to a single source. Thus a later Coptic name *σΙΝΝΠΑ* of the same instrument seems to have Coptic *σ-* from Egyptian palatalized **k'-* (before **-i-*) as a result of an internal Coptic phonetic process typologically similar to the one that occurred independently in several of the languages described above.

In a recent article, Colin Renfrew has stressed the borrowed character of most of the Ancient Greek terms for musical instruments, giving names for lyres among the clear examples.²¹ Such terms as Homeric *φόρυγξ* "lyre", with the same "Pre-Greek" expressive suffix *-ιγ(ξ)* as several other names of musical instruments (Homeric *σῦριγξ* "Pan's pipe, shepherd's pipe, tube", *σάλπιγξ* "trumpet, horn", also *φῶτιγξ* "fife", attested in Plu. and Athen.) have usually

²⁰ Typologically (but not genetically) the Northern Caucasian musical instrument name **dwenV-* (> North-Western Caucasian **twane* > Ubykh *twane*; Nikolayev, Starostin 1994, p. 406) is similar to such expressive onomatopoeic words. But as the meaning of this word in most of the Northern Caucasian languages is "drum" and since the initial consonant cluster with labiodental stop is not at all close to what is found in the words for "lyre", there is no possibility of a historical connection between these forms.

²¹ Renfrew 1998, pp. 246-247, with references to archaeological data.

been considered Mediterranean or "Pelagian"/Minoan loanwords.²² For *σῦριγξ* there is an interesting parallel in Old Armenian *string*, which confirms the migratory character of the name of the pipe, borrowed from a similar source after the time of the Armenian consonant shift. Homeric *κίθαρις* "stringed instrument; lyre" and later *κιθάρα* are also considered to be possible (Oriental?) borrowings.²³ The other word for lyre *λύρα*, supposed to be attested in a recently-discovered Thebes tablet (TH Av 106.7) in the Dual form *ru-ra-ta-e*²⁴ (but later attested only since the Homeric hymns) also lacks a clear etymology.²⁵ The Western Semitic and migratory Ancient Oriental name of the lyre borrowed into Greek in the form *κινύρα* differs from all the other names of musical instruments enumerated above, as its etymology now

²² Chantraine 1979, p. 398; 1984, pp. 1222, 986, 1070-1071, 1238. On the Pre-Greek character of the suffix see already Polivanov 1968, pp. 170 (written before 1937), 341; Van Windekens 1964; early literature on possible connections of these terms to the other Paleo-Balkan Indo-European languages has been summed up in Katičić 1976, pp. 68, 139. Given the important Egyptian parallels pointed out by Renfrew (1988, p. 246) to the trumpet or horn referred to as *σάλπιγξ*, one might suggest a tentative connection of the word to Coptic TAPI < Egyptian *tp* < *db* [**dib*] "horn" (Černý 1976, p. 191; Loprieno 1998, pp. 41, 42), but the reason for the change of the initial consonant and the absence of the sonorant lateral before *-p-* is unclear; compare, however, a comparable difficulty with the absence of the sonorant *-r-* in Coptic Sahidic BOINE / Bohairic OYQINI "harp" < *bynt* < *b(l)nt* [**bajnVt*] (Černý 1976, p. 24; on the initial [f-] in the Sahidic form see: Loprieno 1998, p. 248, fn. 60) if it belongs with *φάρμυγξ*. In the latter case, the change **-rn-* > *-pm-* is found in the other possible Neo-Egyptian/Coptic-Greek comparisons: Ėrnstedt 1953, pp. 84-85, 174; 1959-1961. Medial **-r-* and **-l-* might have changed into *-j/i-* in an original Afroasiatic prototype of the Egyptian words for both "trumpet" and "harp" (on **-r/*-l-* > *-j-*, cf.: Vergote 1945, pp. 130-134; Korostovcev 1967, p. 34), but these processes should have taken place in a very old period, and in that case the respective Greek forms should be compared not to the Egyptian/Coptic forms but to their hypothetical Afroasiatic/Semitic cognates.

²³ Chantraine 1979, pp. 25, 113, 226; 1984, p. 530.

²⁴ Renfrew 1998, p. 247.

²⁵ For various explanations of the word (presumed to be a borrowing) see: Chantraine 1984, p. 651; Vorreiter 1977a.

seems clear. It was borrowed (probably at a later period than most of the other terms) from an Ancient Oriental language in which the initial *k- of the original Western Semitic term had not been palatalized.²⁶ As stringed instruments of the lyre or harp type had become important not only for music and for the vocal performance they accompanied, but also for poetry and ritual in general,²⁷ the links discussed above between their names in Greek and Ancient Oriental languages might indicate the integration of an entire widespread area where later European cultural tradition had been anticipated and prepared.²⁸ Since musical technology was considered to be among the main aspects of the religious life of these societies, its international development spread on a scale and with a speed comparable to modern achievements in the most advanced fields of engineering. The existence of several names for the lyre seems to presuppose the necessity of reconstructing different types of this instrument. One should certainly distinguish among types with a different number of strings. The 4-stringed lyre called φόρμιγξ in Homeric texts differed from the 9- or 7-stringed one probably referred to as κίθαρις.²⁹ If the name λύρα first referred to a 4-stringed instrument, it was later shifted to a 7-stringed one. A famous native Greek (poetic) name was formed on the basis of a metonymy: lyre (made of tortoise shell) = tortoise, as seen in the Homeric hymns, cf. also, among numerous later examples, possibly Sappho fr. 118 L-P, V (103 Diehl): χέλυ "Oh tortoise!" (= "Oh lyre!").³⁰

²⁶ From the data summed up above it follows that the source need not be assumed to have been restricted to Hebrew (as stated in Chantraine 1984, p. 533, with reference to Masson 1967, p. 69, fn. 2; Brown 1965).

²⁷ Ivanov 1999a. See on terminology connected to κίθαρις: Koller 1956, Nagy 1990, pp. 90, 104, 353, 372, 376 fn. 199, 403, 406.

²⁸ Besides works cited in Renfrew 1998 cf. also Duchesne-Guillemin 1980, 1982, 1984; Kilmer 1974; Thiel 1976; West 1994. On musicological data concerning the Anatolian influences on Greek lyres see: Vorreiter 1976; 1977; 1979, pp. 14-16, 18, 22; Renfrew 1998, p. 246. On the evidence for Lydian influence see West 1981, p. 126.

²⁹ West 1981, pp. 115-118. On later relations between terms cf. Nagy 1990, p. 86 (with references).

³⁰ Snell 1981, pp. 46-47 (the text is considered to be doubtful); Chantraine 1984, p. 1253.

Martin West has attempted to define the modes used while singing Homeric texts to the accompaniment of an archaic 4-stringed lyre.³¹ According to his hypothesis, the old manner of singing continued archaic metrical and accentological schemes going back to the Indo-European past. Some of the names of the four strings themselves, as reconstructed by West (following previous scholarship), may go back to prehistoric times, as can be seen by comparing them with corresponding stems in cognate languages:

• *e* — ὑπάτη (χορδή) "the highest string, giving the most grave note":³² Homeric ὕπατος "highest, supreme, most exalted = best", epithet of Zeus; cf. ἐν πυρῇ ὑπάτη "on the top of the pyre"; the semantic function of the formation corresponds to that derived from the same root **(s)-up-* with a synonymous suffix **(-mo-)*³³ in Latin *summus* < **sup-mo-s*, Sanskrit *upama-* "the highest", Avestan *upama*, cf. *uparō* "the highest", Sanskrit *upar-i*, Avestan *upairi*, Old Persian *upariy* : Gothic *ufar*, Greek ὑέρ < **up-er-*. From a comparison of the Greek series ὑπό : ὑπερος : ὕπατος to the Indo-European one **upo* : **upero-* : **upmo-* (deduced from Sanskrit *upa-* : *upara-* : *upama-*, Latin *s-ub* : *s-uperus* : *s-ummus*, Gothic *uf* : *ufar* : *auhuma*) one may conclude that in Greek a **ὑπ(α)μος* has been ousted by ὕπατος.³⁴ (The original root, which developed into a grammatical word in most other dialects — cf. Greek ὑπό, Sanskrit *upa* etc. — was preserved in the Hittite verb *up-* [3 sg. pres. *up-zi* "to rise (of the sun and stars)"].)

• *f* — λίχανος (χορδή) "the second string from the top of a 4-stringed lyre, connected to the forefinger", cf. λιχανός (δάκτυλος) "forefinger";³⁵ the usual (probably popular) etymology connects the word to the Indo-European

³¹ West 1981, pp. 120 ff.; 1986; 1988; 1992, pp. 208-209; cf. Nagy 1996, pp. 131-132, fn. 108-109, 112.

³² Chantraine 1984, p. 1157 (with references to texts).

³³ On the role of the suffixes **-to-* and **-mo-* in superlative function see: Benveniste 1993, pp. 161ff.; cf. on **-ero-* Thumb/Hauschild 1959, p. 169, § 388, n. On the general problem of **-to-* in this intensive sense (similar to the superlative one) in verbal derivation cf. Vine 1998, p. 19, fn. 40; pp. 40-41, 43, fn. 99 (with further references).

³⁴ Szemerényi 1960; 1999, p. 197; Lehmann 1986, pp. 49-50.

³⁵ West 1981, p. 120, cf. Chantraine 1984, p. 629.

verb **leiǵh-* “to lick” (Greek λείγω, Sanskrit *léhmi*, Old Armenian *liz-em*; Latin *lingō*, Gothic *bi-laigon*, Old English *liccian*; Luwian < *liki* “salt-lick”³⁶): thus the forefinger is the finger which is licked. But judging from Greek λιχάζ (gen. λιχάδος) “distance between the thumb and the index finger”, these Greek terms were probably derived from an old measuring term also preserved in Proto-Slavic *lixŭ* “additional, surplus, odd”, assuming that the phonetic shape of this form can be explained by an assimilation of voicelessness, i.e. *lixŭ* < **leik-s-* < **leiǵh-s-*.

• *a* — μέση (χορδή) “middle string of a 7-stringed lyre and the middle finger; the highest key of the lowest tetrachord”, originally the name of the middle finger and of the corresponding string of a 4-stringed lyre;³⁷ Mycenaean *me-sa-to*, *me-sa-ta*, Homeric quasi-superlative (ἐν) μεσσάτω, Att. μέσατος “the second of three sons” (Arist. *Wasps* 1502, Men. Fr. 233); Homeric μέσ(σ)ος “in the middle of”, μέσση ἀλί “in mid-sea”. From archaic mythopoetical contexts such as Homeric πρόσθε λέων, ὅπιθεν δὲ δράκων, μέσση δὲ χίμαιρα (Z 181), one can deduce that the suffix **-yo-* points here to the middle object inside a triadic relationship.³⁸ The Indo-European stem **medh-yo-s* to which the Greek word has been traced back is reflected in Sanskrit *madhyas*, Avestan *maidya-* “middle”, Old Armenian *mēj*; Latin *medius*, Oscan *mefiaí* “mediae”, Gaulish *Medio-*, Gothic *midjis* “middle”, Old Prussian *median* “forest” (from the mythological representation of the “middle world” in the sacred tree), Old Church Slavonic *mežd-u* “between”.³⁹

³⁶ The Glosenskeil points to the Luwian character of the word, which seems to confirm the development **gh > -g/k-* in Luwian (cf. Ivanov 1999, pp. 35, 41); for another interpretation cf. Melchert 1994, p. 255 (according to whom the word should be Hittite, as in Luwian the phonetic result should have been different).

³⁷ West 1981, p. 120; cf. Chantraine 1984, pp. 688-689.

³⁸ Ernout, Meillet 1994, p. 393.

³⁹ The meaning of Hittite *meyanni* “half (?) of the year” (Chicago HD, vol. 3, fasc. 3, pp. 229-234, with bibliographical summary) might make a derivation from **medh-yo-* attractive, but no other traces of such a phonetic development have been found.

• *d* — νεάτη/νήτη (χορδή) “the lowest string of the lyre, with the highest pitch”;⁴⁰ originally the fourth string of a 4-stringed lyre; it is usually supposed that the form has been derived from νεῖος, Att. νέος “new”, a word with correspondences in all the Indo-European dialects. Nevertheless, since the formal aspect of the derivation, on the one hand, is not entirely clear, and since, on the other hand, archaeological data point to the possibility of Egyptian-Greek contacts in the sphere of stringed instruments, it is interesting to note, by way of comparison, the identity of Greek νεῖατα πείρατα “ultima Thule” and Coptic NEAT “the utmost, extreme limit”.⁴¹ If the Demotic Neo-Egyptian or Coptic word had been borrowed into Greek in the meaning “utmost, extreme”, it might have been applied to the lowest string of a lyre, and then later reinterpreted on the basis of a popular etymology linking it to νεῖος/νέος.

In this series the first and the last terms are formed (or, if the last-mentioned hypothesis is accepted, reinterpreted as derived) with the suffix -ατο-ς, used to designate an opposition between polar terms.⁴² Mycenaean *me-sa-to* and related later forms testify to the wider use of this derivational category with the terms given above, at the earliest historical period. With one possible exception the entire series is based on a very old system of native terms. As Martin West has supposed, three new terms were coined (or used in a new meaning) in order to designate the strings of the later 7-stringed lyre. One of them seems as old as the most ancient form in the whole series:

• τρίτος “fourth (as a musical term)”,⁴³ according to West the third string in a 7-stringed lyre.⁴⁴ The word was not only an ordinal numeral expressing the completion of a series,⁴⁵ but also an important mythopoetical

⁴⁰ Chantraine 1984, p. 740, with summary of various difficulties with the explanation of the form, based on work by Seiler.

⁴¹ Êrnstedt 1962, p. 514, with bibliography on the Demotic Neo-Egyptian etymology of the Coptic term. See above (fn. 21) on other such possible comparisons and on Êrnstedt's work in this area.

⁴² Chantraine 1973, p. 262.

⁴³ Chantraine 1984, p. 1131.

⁴⁴ West 1981, p. 120.

⁴⁵ Benveniste 1993, pp. 155-161.

term, as seen in the name of Athena Τριτο-γένεια, cf. τριτο-πάτορες as names of Athenian divinities,⁴⁶ Τρίτων, Vedic *Trita Āptya*, *Trita*, Avestan *Θrita*, *Θραῖταona*, on the basis of which an Indo-European myth about a “Third” Brother has been reconstructed.⁴⁷ The use of this ancient adjective in the series reconstructed by West, overloaded as the word is with mythological shades of meaning, seems intriguing. One might think of a possible link between archaic musical tradition and other areas of Indo-European culture.

Two other terms that had been added to describe the strings of a 7-stringed lyre were derived from existing terms by means of a preceding παρά, to denote an item following the other one. This grammatical element, which might be traceable to a frozen local case form of a “relative” noun (cf. Old Hittite *para* : *peran* < **pero-m* “front side”⁴⁸), is attested since Mycenaean times, and has the meaning of a spatial indicator in Homer⁴⁹ (as in constructions with the names of springs) as well as in later texts. The full 7-member series contains these three additions to the 4-member set (*e, f, a, d*) described above:

1. ὑπάτη
2. παρ-υπάτη
3. λίχανος
4. μέση
5. τρίτη
6. παρ-νήτη
7. νήτη

⁴⁶ Chantraine 1984, pp. 864, 1138.

⁴⁷ Elizarenkova, Toporov 1973; Toporov 1977, 1977a, 1982, 1982a, Elizarenkova 1989, pp. 575, 603; Gamkrelidze, Ivanov 1995, p. 749; Watkins 1995, pp. 278, 313-319. On the symbolism of “the third” in the Rg-Veda, see: Elizarenkova 1995, pp. 475-476 (with further references).

⁴⁸ The idea according to which Indo-European prepositions/postpositions/adverbs of this type may go back to forms of lost paradigms of “relative” nouns (in the sense of Fillmore’s case theory) had already been put forward by Meillet, especially in his *Introduction*. This has been confirmed by the discovery of corresponding paradigms in Old Hittite.

⁴⁹ Chantraine 1986, pp. 120-124.

The possibility of arriving at an older 4-member system by internal reconstruction is evident not only because of the transparently later combinations with *παρά*, but also because in a 4-member series the terms *μέση* and *τρίτη* are in complementary distribution.

Although the names of the lyre might have been borrowed, the details of the use of the instrument, as reflected in these terms for strings, are connected to an authentic indigenous tradition. Such a mixture of an Indo-European legacy with post-IE early Oriental influences seems typical for Greek culture not only in the sphere of music, but in other areas as well.

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References

- Acharian, Hr. 1979. *Hayeren armatakan baġaran* [Etymological Root Dictionary of Armenian], Vol. 4. Erevan: Erevan University.
- Badali, Enrico. 1998. Strumenti musicali, musici e musica nelle celebrazioni delle feste ittite. *Texte der Hethiter*, hrsg. von A. Kammenhuber, Hft. 14/1. Heidelberg: Carl Winter.
- Benveniste, Émile. 1993. *Noms d'agent et noms d'action en indo-européen*. Paris: Librairie d'Amérique et d'Orient Adrien Maisonneuve (reprint).
- Bolognesi, Giancarlo. 1980. L'Armenia tra Oriente e Occidente: Incontro di tradizioni linguistiche nei secoli che precedono e seguono la prima documentazione scritta. *Transcaucasica II. Quaderni del Seminario di Iranistica, Uralo-Altaistica e Caucasologia dell'Università degli studi di Venezia*, Venezia, 26-42.

- Brown, J. P. 1965. Kothar, Kinyras and Kythereia. *Journal of Semitic Studies* 10.197-219.
- Chantraine, Pierre. 1973, 1986. *Grammaire homérique*, I-II. Paris: Klincksieck.
- Chantraine, Pierre. 1979. *La formation des noms en grec ancien*. Collection Linguistique publiée par la Société de Linguistique de Paris, XXXVIII. Paris: Klincksieck (nouveau tirage).
- Chantraine, Pierre. 1984. *Dictionnaire étymologique de la langue grecque*. Paris: Klincksieck (nouveau tirage).
- Cerný, J. 1976. *Coptic Etymological Dictionary*. Cambridge: Cambridge University Press.
- Duchesne-Guillemin, Marcelle. 1980. Sur la restitution de la musique hourrite. *Revue de musicologie* 66.
- Duchesne-Guillemin, Marcelle. 1982. Découverte de l'origine de la musique occidentale. *Bulletin de la Société liégeoise de musicologie* 39.3-18.
- Duchesne-Guillemin, Marcelle. 1984. *A Hurrian Musical Score from Ugarit: The Discovery of Mesopotamian Music*. Sources from the Ancient Near East, 2/2, Malibu, CA: Undena.
- Duchesne-Guillemin, M. 1989. Sur la lyre-kithara géante. *Archaeologica Iranica et Orientalia. Miscellanea in honorem L. Van den Bergh*, ed. L. de Mayer et E. Haerinck (I. Gente), 128-134.
- Dzhaukian, Gework B. 1967. *Očerki po istorii dopis'mennogo perioda armjanskogo jazyka* [Essays on the History of the Preliterary Period of Armenian]. Erevan: Izdatel'stvo Akademii Nauk Armjanskoi SSR.
- Elizarenkova, Tatjana Ja. (ed., transl.). 1989-1995. *Rigveda. Mandaly I-IV, Mandaly V-VIII*. Literaturnye pamjatniki. Moscow: Nauka.
- Elizarenkova, Tatjana Ja., and Vladimir N. Toporov. 1973. Trita v kolodce: vedijskij variant arxaičnyj sxemy [Trita in the well: A Vedic variant of an archaic scheme]. *Sbornik statej po vtoričnym modelirujuščim sistemam*.
- Ellenbogen, Maximilian. 1962. *Foreign Words in the Old Testament. Their Origin and Etymology*. London: Luzac and Co., Ltd.
- Ellermeier, F. 1970. Beiträge zur Frühgeschichte altorientalischer Saiteninstrumente. *Archaeologie und Altes Testament, Festschrift für*

- Kurt Galling zum 8. Januar 1970, hrsg. von A. Kuschke und E. Kutsch. Tübingen: Mohr.
- Ernout, Alfred, and Antoine Meillet. 1994. *Dictionnaire étymologique de la langue latine. Histoire des mots*. Paris: Klincksieck (retirage de la 4 éd.).
- Èrnstedt, P. V. 1953. *Egipetskie zaimstvovanija v grečeskom jazyke* [Egyptian Borrowings in Greek]. Moscow-Leningrad: Izdatel'stvo Akademii Nauk SSSR.
- Èrnstedt (= Jernstedt), P. 1959-1961. Aus dem Gebiet der ältesten Ägyptizismen der griechischen Sprache. *Bibliotheca Classica Orientalis* 43.176; 62.105-112.
- Èrnstedt, P. V. 1962 "More" i "moreplavanie" v slovarnyx egiptizmax axejskoj reči [La "mer" et la "navigation" dans les égyptismes lexicaux de la langue achéenne]. *Drevnij mir. Akademiku V. V. Struve* [The Ancient World. V. V. Struve Festschrift], 513-519. Moscow: Nauka, Izdatel'stvo vostočnoj literatury.
- Friedrich, Johannes. 1952. *Hethitisches Wörterbuch*. Heidelberg: Carl Winter.
- Gamkrelidze, Thomas, and Vyacheslav Ivanov. 1995. *Indo-European and Indo-Europeans*, I-II. Berlin-New York: De Gruyter.
- Gevorgian, A. 1973. *Remesla i byt v armjanskix miniatjurax* [Handicraft and Everyday Life in the Armenian Miniatures]. Erevan.
- Gordon, Cyrus H. 1967. *Ugaritic Textbook. Glossary, Indexes*. *Analecta Orientalia* 38. Roma: Pontificium Institutum Biblicum.
- Gurney, O., and B. Lawergren. 1988. Ancient Mesopotamian Terminology for Harps and Sound Holes. *Archives of Early Musical Culture*, ed. E. Hickman, D. W. Hughes. Orpheus Schriftenreihe zu Grundfragen der Musik, 53. Bonn: Verlag für systematische Musikwissenschaft.
- Haas, V. 1984. *Corpus der Hurritischen Sprachdenkmäler*. 1 Abteilung. Die Texte aus Boğazköy, Bd. 1. Die Serien *itkaḫi* und *itkalzi*, Rituale für Tašmišarri und Tatuḫepa sowie weitere Texte mit Bezug auf Tašmišarri. Roma: Multigrafice editore.
- Hrozný, Friedrich. 1916. *Die Sprache der Hethiter, ihr Bau und Zugehörigkeit zum indogermanischen Sprachstamm. Ein Entzifferungsversuch*. Boghazköi-Studien, hrsg. von Otto Weber, 1. Heft. Leipzig: J. C. Hinrichs.

- Ivanov, Vjačeslav Vs. 1982. K ètimologii nekotoryx migracionnyx kul'turnyx terminov, 2. Xattskie muzykal'nye terminy v drevnevostočnyx jazykax [On the Etymology of Some Migratory Cultural Terms, 2. Hattic Musical Terms in the Languages of the Ancient Orient]. Ètimologija 1980.160-163.
- Ivanov, Vjačeslav Vs. 1985. Ob otnošenii xattskogo jazyka k severozapadnokavkazskim [Hattic and North Caucasian]. *Drevnjaja Anatolija* [Ancient Anatolia], 26-59, ed. B. Piotrovskij, V. G. Ardzinba, V. V. Ivanov. Moscow: Nauka, glavnaja redakcija vostočnoj literatury.
- Ivanov, Vyacheslav Vs. 1999. Palatalization and Labiovelars in Luwian. *Proceedings of the Tenth Annual UCLA Indo-European Conference, Los Angeles, May 21-23, 1998*, 27-48, ed. K. Jones-Bley, M. E. Huld, A. della Volpe, and M. R. Dexter. Washington, D.C.: Institute for the Study of Man (JIES Monograph 32).
- Ivanov, Vyacheslav Vs. 1999a. A Semiotics of Sound Texts: Diachronical Dimension. *Elementa, Journal of Slavic Studies and Comparative Cultural Semiotics* 4.3 [in press].
- Katičić, Radoslav. 1976. *Ancient Languages of the Balkans, Pt. 1. Trends in Linguistics. State-of-the-Art-Reports 4.* The Hague/Paris: Mouton.
- Kilmer, A. D. 1974. The Cult Song with Music from Ancient Ugarit: Another Interpretation. *Revue d'assyriologie et d'archéologie orientale* 68.69-82.
- Koller, H. 1956. Das kitharodische Prooimion: eine formgeschichtliche Untersuchung. *Philologus* 100.159-206.
- Korostovcev, Mixail A. 1967. Fonologičeskaja sistema novoegipetskogo jazyka [The Phonological System of Neo-Egyptian]. *Ellinističeskij Bližnij Vostok, Vizantija i Iran. Istorija i filologija* [The Hellenistic Near East, Byzantium and Iran. History and Philology], 25-43. Moscow: Nauka, glavnaja redakcija vostočnoj literatury.
- Lambert, W. G. 1989. Notes on a Work on the Most Ancient Semitic Literatures. *Journal of Cuneiform Studies* 41.1 (Spring).1-33.
- Landsberger, Bruno. 1958. *Materialen zum sumerischen Lexikon*, Bd. VI. Rom.
- Laroche, Emmanuel. 1980. *Glossaire hourrite. Études et commentaires* 93. Paris: Klincksieck.

- Lawergren, Bo. 1998. Distinctions among Canaanite, Philistine and Israelite Lyres, and Their Global Lyrical Contexts. *Bulletin of the American Schools of Oriental Research* 309 (February). 41-69.
- Lehmann, Winfried P. 1986. *A Gothic Etymological Dictionary*. Leiden: E. J. Brill.
- Loprieno, Antonio. 1998. *Ancient Egyptian: A Linguistic Introduction*. Cambridge: Cambridge University Press (reprint, 1 ed. 1995).
- de Martino, Stefano. 1988. Il Lessico musicale ittita. *Hethitica IX* (Bibliothèque des Cahiers de l'Institut de Linguistique de Louvain, 43), 5-16. Louvain-La-Neuve: Peeters.
- Masson, Émilie. 1967. *Recherches sur les plus anciens emprunts sémitiques en grec*. Paris: Klincksieck.
- Melchert, H. Craig. 1994. *Anatolian Historical Phonology*. Amsterdam/Atlanta, GA: Rodopi.
- Mkrtschjan, N. 1974. Neue hethitisch-armenische lexikalische Parallelen. *Acta Antiqua Academiae Scientiarum Hungaricae* XXII¹⁻⁴. 313-319.
- Nagy, Gregory. 1990. *Pindar's Homer. The Lyric Possession of an Epic Past*. Baltimore and London: The John Hopkins University Press.
- Nagy, Gregory. 1996. *Poetry as Performance. Homer and Beyond*. Cambridge: Cambridge University Press.
- Nikolayev, Sergei, and Sergei Starostin. 1994. *A North Caucasian Etymological Dictionary*. Moscow: Asterisk.
- Norborg, Ake. 1995. *Ancient Middle Eastern Lyres* (Musikmuseets skrifter 25). Stockholm/Copenhagen: Jespersen Offset Aps.
- Pettinato, G. 1982. Testi lessicali bilingue della biblioteca L. 2769. In collaborazione con E. Arcari, A. Magi-Spinetti e G. Visicato, *Materiali epigrafici di Ebla*, 4. Napoli: Istituto universitario orientale.
- Polivanov, Evgenij D. 1968. *Stat'i po obščemu jazykoznaniju*. Moscow: Nauka, glavnaya redakciya vostočnoy literatury [published in English as: *Works in General Linguistics*. The Hague: Mouton, 1974].
- Renfrew, Colin. 1998. Word of Minos: the Minoan Contribution to Mycenaean Greek and the Linguistic Geography of the Bronze Age Aegean. *Cambridge Archaeological Journal* 8². 239-264.

- Rüster, Christel, and Brich Neu. 1989. *Hethitisches Zeichenlexikon. Inventar und Interpretation der Keilschriftzeichen aus den Boğazköy-Texten*. Wiesbaden: Otto Harrassowitz (StBoT Beiheft 2).
- Shibayama, Sakae. 1975. The Musical Instrument "kinnāru" at Mari and "knr". *Oriente. Bulletin of the Society for Near Eastern Studies in Japan* 18:49-63 [in Japanese].
- Sifman, I. Š. (ed., transl.). 1993. *Ugaritskij epos [Ugaritic Epic]. Pis'mennye pamjatniki Vostoka [Written Monuments of the East]*. Moscow: Nauka, izdatel'skaja firma "Vostočnaia literatura".
- Snell, Bruno (ed.). 1981. *Früh-griechische Lyriker, 3 Teil. Sappho, Alkaios, Anakreon. Schriften und Quellen der Alten Welt, Bd. 24,3*. Berlin: Akademie-Verlag.
- Szemerényi, Oswald. 1960. Gothic *auhuma* and the so-called comparatives in *-uma-*. *Beiträge zur Geschichte der Deutschen Sprache und Literatur* (Tübingen) 82.1-30.
- Szemerényi, Oswald. 1999. *Introduction to Indo-European Linguistics*. Oxford: Oxford University Press (reprint of 1996 edition).
- Thiel, Hans-Jochen. 1977. Der Text und die Notenfolgen des Musiktextes aus Ugarit. *Studi Micenei ed Egeo-Anatolici, fasc. XVIII (= Incunabula Graeca, vol. LXVII)*, 109-136. Roma: Edizioni dell'Ateneo & Bizzarri.
- Thumb, Albert (ed. Richard Hauschild). 1959. *Handbuch des Sanskrit, II T. Formenlehre*. Heidelberg: Carl Winter.
- Toporov, Vladimir N. 1977. Avest. *θrita*, *θraētona*, dr.- ind. *trita* i dr. i ix indoevropskie istoki [Avestan *θrita*, *θraētona*, Old Indian *trita* etc. and their Indo-European Origins]. *Paideia XVI.3 (Serie Orientale, 8)*.41-65.
- Toporov, Vladimir N. 1977a. Ob otrazhenii odnogo indoevropskogo mifa v drevnearmjanskoj tradicii [On a Trace of an Indo-European Myth in the Old Armenian Tradition]. *Istoriko-filologičeskij žurnal* 3.101-103.
- Toporov, Vladimir N. 1982. *Trítá. Tríta, Frita. Mify narodov mira. Ènciklopedija [Myths of the Peoples of the World. Encyclopedic Dictionary]*, Vol. 2, 525-526. Moscow: Sovetskaja Ènciklopedija.
- Vine, Brent. 1998. *Aeolic ὀρετον and Deverbative *-etó- in Greek and Indo-European*. Innsbruck: IBS (Vortr. u. kleinere Schriften 71).

- Vorreiter, Leopold. 1972. Altsemitische Schräglyren. *Zeitschrift für die Musikforschung* 27¹.72-79.
- Vorreiter, Leopold. 1972/1973. Westsemitische Urformen von Saiteninstrumenten. *Mitteilungen der Deutschen Gesellschaft für Musik des Orients* (Berlin) 11.71-77.
- Vorreiter, Leopold. 1976. Die Musikinstrumente Europas im Altertum — welche Erkenntnisse liefern sie der Gegenwart? *Archiv für Musikorganologie* 1/1 (Dezember).34-48.
- Vorreiter, Leopold. 1977. Apollon-, Orpheus- und Thamyris-Lyren. *Archiv für Musikorganologie* 2.113-133.
- Vorreiter, Leopold. 1977a. Lyren der Illyroi. *Archiv für Musikorganologie* 2.68-85.
- Vorreiter, Leopold. 1979. Archaisch-antike Lyrenbaukunst — eine polyvalente Hochkunst. *Archiv für Musikorganologie* 3-4/1.14-30.
- Vorreiter, Leopold. 1979a. Riesenlyren der Altertums. *Archiv für Musikorganologie* 3-4/1.30-37.
- Watkins, Calvert. 1995. *How to Kill a Dragon. Aspects of Indo-European Poetics*. New York: Oxford University Press.
- Van Windekens, A.J. 1964. Considérations sur quelques mots grecs d'origine pélasgique. *Orbis* 13¹.236-239.
- West, Martin L. 1981. The Singing of Homer and the Modes of Greek Music. *Journal of Hellenic Studies* 101.113-129.
- West, Martin L. 1986. The Singing of Hexameters: Evidence from Epidaurus. *Zeitschrift für Papyrologie und Epigraphik* 63.39-46.
- West, Martin L. 1988. The Rise of the Greek Epic. *Journal of Hellenic Studies* 108.151-172.
- West, Martin L. 1992. *Ancient Greek Music*. Oxford: Oxford University Press.
- West, Martin L. 1994 The Babylonian Musical Notation and the Hurrian Melodic Texts. *Music and Letters* 75².161-174.
- Ziegler, Chr. 1979. *Catalogue des instruments de musique égyptiens*. Paris: Édition de la Réunion des Musées Nationaux.

Vyacheslav V. Ivanov

Among the interesting discoveries of the last two decades connected with the study of the dialect of the Novgorodian birch-bark documents, one may single out the proper name *Nevid-e* (Nom. Sg. Masc.), attested in a text of the XIIth c.¹ The name belongs to an archaic non-productive type of Slavic composition in personal names with a negation *ne-* as its first element, followed by a verbal stem; cf. the Polish tripartite compounds *Nie-z-da*, *Nie-zna-wuj*, *Nie-da-był*, and the old Balto-Slavic type preserved in Old Prussian *Ne-quithe*, *Ne-moc*.² In his study of the document, Zaliznjak compared the proper name with the noun attested in Slovene *nevid* "infusorium", Serbo-Croatian *nevid* "the smallest flying insect"³; cf. also the adverb *nevidom* "imperceptibly", Old Russian/Church Slavonic *nevidimo* "imperceptibly"⁴ (Daniil Zatočnik's Prayer), "in an unknown way" (1st Novgorod Chronicle, yr. 6600 and 6702); the adjective *nevidimŭ* = Greek ἀόρατος (XIIth c. translation of Gregory the Theologian),⁵ *nevidomŭ* "invisible" (Cyrill of Turov), *nevidimŭ* "invisible" (Tale of Boris and Gleb, XIVth c.),⁶ *slovo nevidimoje*

¹ Birch-bark document N 663, Janin, Zaliznjak 1993, pp. 53, 334, cf. Zaliznjak 1991. The ending *-e* of masculine thematic stems (probably cognate to the Proto-Slavic Vocative **-e*) is a characteristic feature of this dialect, separating it from the rest of the older Slavic languages; on the various explanations, see Zaliznjak 1995.

² Milewski 1969, pp. 118, 135, 138, 200, 203, 204. The Novgorodian personal name *Nesda*, historically identical to Polish *Nie-z-da* < **Ne-sti-da*, is known from the chronicle; from this were derived a possessive **Nes(ŭ)dičevŭ* > *Nesdicevee* (birch-bark document from Staraja Rusa, N 22, Janin, Zaliznjak 1993, pp. 110-11, 334) and *Nes(ŭ)diničŭ* (Ivanov 1995, p. 9, with references).

³ For the latter, compare the American English colloquialism *no-see-um* 'gnat, midge, punkie' (AHD³ 1237, s.v.).

⁴ Zaliznjak 1991, p. 507.

⁵ Budilovich 1875, p. 365; Sreznevskij 1895/1958, p. 360. The Glagolitic original was written in the Macedonian Dialect of Old Church Slavonic: Durnovo 1969, p. 36.

"invisible word" (Svjatoslav's Collection, 1073 A.D.); *nevidi/ěma sila* "invisible power" (1st Novgorod Chronicle, yr. 6767 and 6888); as a poetic archaism the short adjective *nevidim* (with archaic final stress) is used in the final part of Alexander Blok's "Twelve" (in relation to Christ, as in the Old Russian texts cited above). In Russian fairy tales the expression *šapka nevidimka* designates a miraculous cap that renders its owner invisible.⁷

In his comment on the Novgorodian name and its Slavic cognates, Zaliznjak also mentioned the traditional etymology of the Greek name of Hades in terms of Indo-European **h₂-wid-* "unseen". For quite some time, this was considered to be a kind of popular etymology, which competed with Thieme's derivation from **som wid-* (based on a comparison with Old Indian *sam gam-* in contexts relating to the underworld). But in a recent article, Beekes has pointed out that this explanation can be valid only in connection with the Realm of the Dead, and cannot be applied to the name of a god. Thus a return to the traditional etymology is advisable.⁸

There is another probable Slavic-Greek lexical and derivational correspondence that belongs to the same semantic sphere. From the stem *ne-vid-* the Russian noun *névidal'* "an unusual, unexpected or amazing thing; wonder, prodigy" was also derived. (The word is now rarely used, appearing mainly in archaic colloquial expressions like *ěkaja névidal'* "What a strange thing!"; cf. *vot névidal'* "Such an unusual thing!", used ironically in Krylov's fable "The Pike and The Cat".) From a formal point of view, the stem *nevidal-* (on the basis of which *névidal'* has been derived as a noun in *-yo-) is an exact correspondent of the still enigmatic Ancient Greek *αἰδηλος* "destructive, destroying, pestilent" < "invisible, terrible".⁹ In Slavic (as also in Baltic) an innovation took place according to which most of the old compounds with Indo-European privative **h₂-*, i.e. with syllabic nasal from an old zero grade, were transformed into forms with the full grade **ne-* of the

⁶ Sreznevskij 1860, p. 41; 1895/1958, p. 360; see also ib. on the noun *nevidenije* in the *Mineja* of yr. 1096.

⁷ A form built according to this model was used in the Russian translation of the title of H. G. Wells' novel *The Invisible Man* (Russ. *Čelovek-nevidimka*).

⁸ Beekes 1998, pp. 17-19.

⁹ On the semantic development see Chantraine 1979, p. 242; 1990, p. 31.

old negative particle.¹⁰ This development can be reconstructed by comparing a few archaic forms in which the zero grade has been preserved as the result of a transformation: u-bogŭ "beggar (not having his portion from god)" > ne-bogŭ.¹¹ The verbal stem (derived from an athematic verb) had the suffix *-ē- in Slavic *vid-ě-ti, Eastern Baltic (Lithuanian pa-vyďėti, Latvian pa-vidēt), Latin vidēre and Gothic witan.¹² Aspectual innovations in Balto-Slavic have led to a grammatical opposition between the suffixes *-ē- and *-ā- in stems of the same verb (Slavic *vid-ě-ti : vida-ti), and some of these *-ā- stems may be quite old. In the form αἰδηλος, a stem in *-ē- is generally supposed on the basis of the parallel fut. εἰδήσω,¹³ but a stem in *-ā- comparable to Slavic *vidati is not absolutely excluded for prehistoric Greek.¹⁴ But even if, in the end, the Russian form requires *-wid-ā-lo- while the Greek one (in the absence of a pattern of verbal derivation in *-ā- in Greek) requires *-wid-ē-lo-, we may still be dealing with an essentially cognate structure in terms of its formation. Thus from the Indo-European *ṛ-wid-ē/ā-lo- that might be reconstructed as a proto-form for αἰδηλος, one would have expected a Proto-Slavic *ne-wid-(ēlo-/ālo-), with the same combination ne-wid- as in the other Slavic words enumerated above. The combination *-ēlo- or *-ālo- contains a suffix *-lo- that is thought to continue a type of old Indo-European deverbative adjective or participle.¹⁵ The spread of this formation, which was attributed, at the time of the Pan-Illyrian fashion, to Illyrian influence,¹⁶ can now be seen more clearly from the point of view of Indo-European dialectology. A group of Indo-European dialects that included Slavic, Tocharian and Armenian, as

¹⁰ Milewski 1969, p. 118.

¹¹ Ivanov 1995, pp. 9-10.

¹² Schmid 1963, p. 65; Jasanoff 1978, pp. 107ff.

¹³ Chantraine 1979, p. 242.

¹⁴ Despite e.g. Soph. *Ajax* 608 (lyric) αἰδηλον (in an interesting etymological figure αἰδηλον "Αἰδαν, see Stanford 1963, p. 137, ad loc.), a Dor. αἰδαλος is actually attested, see LSJ s.v. αἰδηλος.

¹⁵ Chantraine 1979, pp. 241-242; somewhat differently Solta 1970 (where the "Voluntative" in *-l- is considered to be related; but see on this category the last part of the author's "Comparative Notes ...", in this volume).

¹⁶ Krahe 1947. Although Krahe's hypothesis is unacceptable, the materials collected in this article remain useful for understanding the distribution of this type in different dialects.

also such Northern Anatolian languages as Lydian, made extensive use of *-l- participles in modal and temporal functions; in Hittite, isolated forms like *parganula* "those [mountains] that should be made high" may present traces of a similar type.¹⁷ Thus forms in *-l- in the other dialects, such as Greek, may belong to an older layer of derivation common to all the dialects, before this type became extremely productive in some of them.

An interesting problem is presented by the accentuation of the stem. In Slavic the stress is shifted to the initial privative element of a compound. In Greek the accent is as close to the beginning as possible. This accentuation (normal for compounds) differs from the usual oxytone pattern of the -λο- adjectives¹⁸ and may reflect an archaism.¹⁹

It can be supposed that in prehistoric Greek there was a whole group of suffixed forms derived from **ḡ-wid-*. Besides *αἰδηλος*, another such form is Mycenaean *o-wi-de-ta-i*, which according to Vine's hypothesis goes back to **ḡ-wid-eto-*.²⁰ As the context in which this word occurs in Mycenaean is mythological, it is necessary to return to the semantic side of the etymology of Hades and of *αἰδηλος*.

According to Puhvel,²¹ Hittite *awiti* "lion" is connected to the same type of Indo-European privative formation, as is Latin *invisus* "hated, hostile" < **"not to be countenanced"*, where the idea of the evil eye is usually supposed. It has been established that the category of the invisible belongs to the universal features of mythological thought.²² As Propp has shown, the re-

¹⁷ Rosenkranz 1978, pp. 134-145; Ivanov 1981; differently on this form CHD P² (1995), p. 158, s.v.

¹⁸ Bally 1945/1997, p. 72, §§128-129; Lubotsky 1988, pp. 131-132, §3.11.

¹⁹ On the accentuation of privative compounds cf. Kurylowicz 1968, pp. 66-68, §65. In Russian, a partial parallel is provided by another *-l-yo- formation *né-do-ros-l'* 'young ignoramus, lazy/immature youngster' < **"not having grown up"*, likewise with initial stress (and different from oxytone finite forms such as 3 Pers. Pl. Pret. *ne-do-ros-l-i*, derived from a participle in *-lo-).

²⁰ Vine 1998, pp. 33-35.

²¹ Puhvel 1984, pp. 247-248.

²² Riftin 1946; Ivanov 1973 (with references), see ib., p.158, on the Hittite myth of the hunter Kešši, of Hurrian origin, which shows a similar semantic structure. In Hittite (for example, in

lation between the world of the dead and that of living persons depends on their mutual invisibility.²³ This universal principle, according to which the dead and the god of their world are invisible, can also be applied to Greek ideas of the Netherworld, as seen for instance in the Orpheus myth, in the link between Hades and the cap that renders people invisible, as well as in the image of the Gorgon "with terrible eyes (< "vulture-eyed", βλοσυρῶπις) and her shield.²⁴ The role of the opposition "invisible - visible", established in studies of Greek mythology and ritual,²⁵ is relevant also for Slavic and some other Indo-European traditions.²⁶

From the point of view of semantic mythological reconstruction, it may be possible to suggest that in Proto-Indo-European there could have been a verbal formula that expressed the idea of invisibility. The Slavic and Greek words, together with their possible Hittite and Latin cognates traceable to Indo-European **h₂-wid-*, make it probable that this compound with privative **h₂-* had precisely this function in Indo-European. The same form is also attested in most of the ancient Germanic languages and in Celtic, but with a semantic change characteristic of this root involving a shift from "seeing" to "knowledge"²⁷: Gothic *un-wita* "ignorant", Old High German *un-wizzi* "ignorance", Old Saxon *un-witt*, Old Irish *ainb* "not knowing". In this particular meaning another form of the initial privative element appears in Greek:

the text about Kešši), the verb *munnai-* "to hide, to conceal" expresses the idea of invisibility, cf. also šakuwa *munnai-* "to hide one's eyes", CHD 3³ (1989), pp. 329-332.

²³ Propp 1946, pp. 58-61; Ivanov 1973, pp. 155-158.

²⁴ Gernet 1982, p. 215; Vernant 1986, p. 77; 1989, p. 124; cf. Sergent 1998, pp. 185, 187. On the etymology of the Gorgon's epithet βλοσυρῶπις, reconstructed as **g^wi₂turos* (cf. Latin *vultur*), see Leumann 1959, p. 189 (more cautious attitude in Chantraine 1990, pp. 181-182) and the typological remarks in Ivanov 1973, pp. 164-173.

²⁵ Gernet 1982, pp. 227-238; Golosovker 1987, pp. 27-28, 51-61 (the manuscript, written in the 1930s-1950s by this great philosopher and classical scholar who was persecuted by the Soviet regime, was published posthumously in fragments).

²⁶ On the Celtic myths about Balor and Yspaddaden Penkawz, see Dillon 1948, p. 60. On the use of these motifs by Joyce: Rigars 1948; Smecke 1969; Tymoczko 1994, pp. 34-35.

²⁷ One might think of the change of values of the invisibility as a mythological feature, and of ignorance as a rational one pointing to the rise of logical thinking.

Homeric $\nu\eta\iota\varsigma$ < *ne-wid-s “unknowing”,²⁸ cf. Homeric $\alpha\iota\sigma\tau\omicron\varsigma$ (probably already in Myc. *a-wi-to-do-to* /Awistodotos/, MN.) “unseen” < * η -wid-to-s. The semantic split was accompanied by a formal differentiation between the two possible forms of the privative element, which again reminds us of formal parallels in Proto-Slavic. In both of these Indo-European dialects, different ablaut variants of the privative element are represented. But the direction of the morphological drift in Slavic was the opposite of that which occurred in Greek. In Slavic most of the old privative compounds generalized the full-grade form *ne-, while in Greek there are only traces of the latter, and the form with the syllabic sonant (or prevocalic consonant) * η -/n- was generalized. A similar differentiation may be visible in the tendency to use the zero grade in Northern Anatolian (Hittite *ammiyant-* “small”, probably *aššiw-ant-* “beggar”²⁹; Palaic *ūmmaya-* “immature”³⁰) as opposed to the clear dominance of forms with an initial ni- in Southern Anatolian: Cuneiform Luwian (CL) \leftarrow ni-waralli- “alien, hostile” (: waralli- “one’s own”), Hieroglyphic Luwian (HL) na-wa+ra/i-li-; HL *INFANS*ni-muw-iza- “child” (: CL *mūwa-* “might, power”). In several cases comparable forms with ni- are known from Hittite also: CL ni-wallant- “ineffectual, good-for-nothing” (: wallant- “fit, capable”), Hit. *newalant-*; CL (\leftarrow) ni-walli- “innocent”, Hit. *niwalla-*.³¹ If these words are Luwian borrowings, they would not contradict the Hittite tendency for zero grade of the first element. Otherwise, one could suggest the possibility that Hittite preserved both forms while Luwian had only the e-grade. Tocharian has mostly forms with zero grade. Thus for Indo-European it is necessary to reconstruct both types, while their separate development characterizes whole groups of Indo-European dialects.

²⁸ Chantraine 1990, p. 750, with a survey of theories about the long vowel of the first syllable; on the accent cf. Kurylowicz 1968, p. 106, §118, p. 261, §332.

²⁹ Starke’s objections (1990, pp. 448–454) are not valid if the word was borrowed from Hittite into Luwian (cf. already Meriggi 1957, p. 65, fn. 2; Ivanov 1995, p. 8). The semantic development is presumed to be similar to the Slavic word for “beggar” cited above.

³⁰ C. Reiss apud Melchert 1994, p. 214; Vine 1998, p. 35, fn. 80.

³¹ Starke 1990, p. 452; Melchert 1993, pp. 159–160, 257 (with references).

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References

- AHD³: *The American Heritage Dictionary of the English Language*³
(Boston/New York: Houghton Mifflin, 1993).
- Bally, Charles. 1945. *Manuel d'accentuation grecque*. Berne: A. Francke (repr. Georg Éditeur, 1997).
- Beekes, Robert S. P. 1998. Hades and Elysion. *Mfr Curad: Studies in Honor of Calvert Watkins* (ed. J. Jasanoff et al.), 17-28. Innsbruck (IBS 92).
- Budilovič, A. 1875. XIII Slovo grigorija Bogoslova v drevneslavjanskem prevodu po rukopisi Imperatorskoj publičnoj Biblioteki, XI v. [13 Words by Gregory the Theologian according to the Manuscript of The Emperor's Public library, XIth c.]. St. Petersburg.
- Chantraine, Pierre. 1979. *La formation des noms en grec ancien*. Paris: Klincksieck (nouveau tirage; 1 éd. 1933).
- Chantraine, Pierre. 1990. *Dictionnaire étymologique de la langue grecque. Histoire des mots. A-K*. Paris: Klincksieck (nouveau tirage).
- CHD: *The Hittite Dictionary of the Oriental Institute of the University of Chicago*, ed. Hans G. Güterbock and Harry A. Hoffner. Chicago: The Oriental Institute of the University of Chicago.
- Durnovo, Nikolaj N. 1969. *Vvedenie v istoriju russkogo jazyka*. Moscow: Nauka.
- Gernet, Louis. 1982. *Anthropologie de la Grèce antique*. Champs. Paris: Flammarion (1 éd. 1968).
- Golosovker, Jakov E. 1987. *Logika mifa [The Logic of Myth]*. Moscow: Nauka, glavna redakcija vostočnoj literatury.
- Ivanov, Vjačeslav V. 1973. Kategorija "vidimogo" i "nevidimogo" v tekste [The Category of the "Visible" and the "Invisible" in a Text]. *Structure of Texts and Semiotics of Culture*. (ed. J. van der Eng and M. Grygar), 151-176. The Hague-Paris: Mouton.

- Ivanov, Vjačeslav V. 1981. Proisxoždenie slavjanskix glagol'nyx form na I [The Origin of Slavic Verbal Forms in I]. *Sovetskoe slavjanovedenie* 6.91-102.
- Ivanov, Vjačeslav V. 1995. Tipologija lišitel'nosti (karitivnosti) [The Typology of Caritativity]. In Vjačeslav V. Ivanov, Tatjana N. Mološnaja, Arina V. Golovačeva, Tatjana N. Svešnikova, *Ètjudy po tipologii grammatičeskix kategorij v slavjanskix i balkanskix jazykax*, 5-59. Moscow: Indrik.
- Janin, Valentin L., and Andrej A. Zaliznjak. 1993. *Novgorodskie gramoty na bereste (iz raskopok 1984-1989)* [Novgorodian Birch-bark Documents (from the 1984-1989 Excavations)]. Moscow: Nauka Press.
- Jasanoff, Jay H. 1978. *Stative and Middle in Indo-European*. Innsbruck (IBS 23).
- Krahe, Hans. 1947. Das Suffix -alo- in Illyrischen Eigennamen. *Revue des études indo-européennes* 2/1-2.159-169.
- Kuryłowicz, Jerzy. 1968. *Indogermanische Grammatik*, Bd.2. Akzent, Ablaut. Heidelberg: Carl Winter.
- Leumann, Manu. 1959. *Homerische Wörter. Kleine Schriften*. Zürich-Stuttgart.
- Lubotsky, Alexander M. 1988. *The System of Nominal Accentuation in Sanskrit and Proto-Indo-European*. Leiden: E. J. Brill.
- Melchert, H. Craig. 1993. *Cuneiform Luvian Lexicon*. *Lexica Anatolica*, vol. 2. Chapel Hill, N.C.
- Melchert, H. Craig. 1994. *Anatolian Historical Phonology*. Amsterdam: Rodopi.
- Meriggi, Piero. 1957. Testi Luvii. *Athenaeum* XXXV/I-II.56-77.
- Milewski, Tadeusz. 1969. *Indoeuropejskie imiona osobowe*. Polska Akademia Nauk/Oddział w Krakowie, Prace Komisji językoznawstwa 18. Wrocław-Warszawa-Kraków: Zakład narodowy Imiennia Osolińskich. Wydawnictwo Polskiej Akademii Nauk.
- Propp, Vladimir Ja. 1946. *Istoričeskie korni volšebnoj skazki* [The Historical Origins of The Fairy Tale]. Leningrad: Izdatel'stvo Leningradskogo universiteta.
- Puhvel, Jaan. 1984. *Hittite Etymological Dictionary*, vol. 1/2. Berlin-New York: De Gruyter.

- Riftin, A. P. 1946. *Kategorii vidimogo i nevidimogo mira v jazyke* [Categories of the Visible and Invisible World in Language]. Učenyje Zapiski Leningradskogo Gosudarstvennogo Universiteta, serija filologičeskix nauk, vyp. 10.
- Rigars, I. A. 1948. Irish Myth and the Plot of Ulysses. ELH 15.
- Rosenkranz, Bernhard. 1978. *Vergleichende Untersuchungen der altanatolischen Sprachen*. Trends in Linguistics, State-of-the-Art Reports 8. The Hague-Paris: Mouton.
- Schmid, Wolfgang. 1963. *Studien zum baltischen und indogermanischen Verbum*. Wiesbaden: Otto Harrassowitz.
- Sergent, Bernard. 1998. *Les trois fonctions indo-européennes en Grèce ancienne, I. De Mycènes aux tragiques*. Paris: Economica.
- Smecke, G. 1969. *Funktion und Bedeutung der Parodie in Joyces Ulysse*. Inaugural-Dissertation. Köln: Universität.
- Solta, Georg R. 1970. Der hethitische Imperative der 1. Person Singular und das idg. 1-Formans als quasi-desideratives Element. Indogermanische Forschungen 75.44-84.
- Sreznevskij, Izmail I. 1860. *Skazanie o svjatyx Borise i Glebe. Sil'vestrovskij spisok XIV v.* [The Tale of Saints Boris and Gleb. The Sil'vestr text of the XIVth c.]. St. Petersburg.
- Sreznevskij, Izmail I. 1895. *Materialy dlja slovarja drevne-russkogo jazyka po pis'mennym pamjatnikam*, t. 2. St. Petersburg: Tipografija Imperatorskoj Akademii Nauk (repr. Moscow: Izdatel'stvo inostrannyx i nacional'nyx slovarej).
- Stanford, W. B. 1963. *Sophocles, Ajax*. London: Macmillan & Co.
- Starke, Frank. 1990. *Untersuchungen zur Stammbildung des keilschriftluwischen Nomens*. Wiesbaden: Otto Harrassowitz (StBoT 31).
- Tymoczko, Maria. 1994. *The Irish Ulysses*. Berkeley: University of California Press.
- Vernant, Jean-Pierre. 1986. *La mort dans les yeux*. Paris: Hachette.
- Vernant, Jean-Pierre. 1989. *L'individu, la mort, l'amour. Soi-même et l'autre en Grèce ancienne*. Paris: Éditions Gallimard.
- Vine, Brent. 1998. *Aeolic ὀρετον and Deverbative *-etó- in Greek and Indo-European*. Innsbruck: IBS (Votr. u. kleinere Schriften 71).
- Zaliznjak, Andrej A. 1991. Ob odnoj berestjanoj gramote XII veka [On a Birch-bark Document of the XIIth c.]. *Words are Physicians for the Ailing*

Mind. Festschrift Andrzej Bogusławski (ed. M. Grocowski and D. Weiss). Munich: Otto Sagner.

Zaliznjak, Andrej A. 1995. *Drevnenovgorodskij dialekt* [*The Old Novgorodian Dialect*]. Moscow: Škola "Jazyki russkoj kul'tury".

A Note on the Duenos Inscription

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0. *Introductory*

The well-known Archaic Latin "Duenos Inscription",¹ conventionally dated to the 6th or early 5th c. B.C.E.,² requires no detailed introduction; nor is there any question of surveying the immense bibliography devoted to the many enigmas — archeological, cultural, epigraphical, linguistic — surrounding this celebrated and frustrating text and the unique object on which it is inscribed.³ It will be helpful for present purposes, however, to provide several preliminary remarks by way of orientation.

Apart from one or two unresolved paleographical indeterminacies (such as the interpretation of the vertical stroke between IOVE and SAT in the initial sequence), it is generally agreed that the text consists of three units (here referred to, for convenience, as "lines"), to be read as follows:

1 IOVESATDEIVOSQOIMEDMITATNEITEDENDOCOSMISVIRCOSIED

2 ASTEDNOISIOPETOITTESIAIPACARIVOIS

3 DVENOSMEDFECEDENMANOMEINOMDVENOINEMEDMALOSTATOD

Whereas the word-division and (partly in consequence) the interpretation of most of line 2 remain opaque, lines 1 and 3 are composed almost entirely of recognizable Latin vocabulary, and now yield more or less acceptable sense. Thus for lines 1 and 3, roughly:

¹ CIL I² 4 = Ernout *Recueil* 3, ILLRP 2, Gordon *Intro.* 3, Wachter 1987: §§27-8, Pisani *Testi* A4.

² See e.g. Solin (1969: 252-3).

³ The most recent detailed study known to me is that of G. Pennisi (1992), which, however, is highly problematic in a number of respects.

- [1 beg.] IOVESAT()DEIVOS()QOI()MED()MITAT
iurat deos qui me 'mittit'
 "The person who 'sends' (?) me swears by the gods: ..."
- [1 concl.] NEI()TED()ENDO()COSMIS()VIRCO()SIED
ni in te [= erga te] comis virgo sit
 "... if the/a 'girl' is not kind/friendly towards you, ..."
- [3 beg.] DVENOS()MED()FECED()EN()MANOMEINOM()DVENOI
Bonus/bonus me fecit in MANOMEINOM bono
 "Mr. Good/A good man made me EN()MANOMEINOM for a good man;"
- [3 concl.] NE()MED()MALOS()TATOD or NE()MED()MALO(S)()STATOD
ne me malus [tollito, clepito]⁴
 "... Let an evil person not steal me."

The purpose of this paper is to explore the two remaining problems in lines 1 and 3, namely MITAT (1 beg.) and EN()MANOMEINOM (3 beg.). I will suggest, moreover, that these two portions of the text may in fact be related to each other.

1. MITAT

1.1. Despite, for example, the arguments of H. B. Rosén (1957: 244), which ignore the evidence of KAPIAD in the Forum Inscription (CIL I² 2), it now seems fairly clear that MITAT is indicative and not subjunctive, and that it must mean something like 'gives' or 'offers'. This emerges with particular clarity from the use of the same form near the beginning of the (probably slightly later) "Tibur Pedestal Inscription" (CIL, I² 2658; HOI()MED()MITAT...), as dis-

⁴ TATOD or STATOD: cf. Hitt. *tāyezzi* 'steals', Ved. *stend-/stāyú-* 'thief', etc.; H. Rix (1985: 193ff.), H. Eichner (1988-90: 216).

cussed in detail by A. Mancini (1981).⁵ There is less agreement, however, as to the precise formal and semantic interpretation of MITAT. According to the majority view, the form is related to Class. Lat. *mittere*: thus recently Eichner (1988-90: 223n33, cf. his initial gloss "übersendet (zur Aufstellung)", followed by "präsentiert, widmet, dediziert"), as well as Mancini, who suggests that MITAT reflects a zero-grade "intensive" or "durative" **mitāre* (beside *mittere* < **meitere*), of the type *occupāre* (: *capere*), *ēducāre* (: *dūcere*), etc. Even though these intensives normally appear with "perfectivizing" preverb, the existence of archaic uncompounded intensives of the type *dicāre* 'consecrate' (beside *dēdicāre*, *praedicāre* etc.) renders such an account for MITAT not only possible, but even attractive, if not for two further considerations (apart from the suspicious absence of forms like ***praemitāre*, ***ēmitāre*, etc.). First, there is the problem of how to interpret MITAT semantically according to this theory: it is exceedingly difficult to envision how an intensive of *mittere* could yield the semantics required for MITAT in both the Duenos Inscription and (still more clearly) the Tibur Pedestal Inscription, even granting for *mittere* an Urbedeutung along the lines of 'let go, release' (see e.g. Ernout-Meillet s.v.). Secondly, the comparison of MITAT with *mittere* involves a somewhat troubling phonological indeterminacy, as noted by Eichner (1988-90: 223n33): "Ein Problem, aber sicherlich kein unüberwindliches, stellt lediglich der Anlaut von MITAT bei etymologischer Verknüpfung mit *mittere* dar (vgl. *cosmittere* bei Paulus ex Festo). Die betreffende Wurzel hat anscheinend *s mobile*, weswegen die Frage der Datierung des Anlautwandels *sm* zu *m* hier nicht virulent ist." But to dismiss the testimony of *cosmittere* in Festus by appealing to *s-mobile* is neither methodologically nor theoretically satisfactory, even if the sole extra-Latin comparandum (Av. *maēθ-* 'werfen', cf. *hamista-* 'niedergeworfen', allegedly < **ham-[h]mista-*) is itself phonologically ambiguous on this point. For medial *-sm-/-sn-* clusters, the material preserved in "Festus" is otherwise generally accurate (e.g. *cesna*, *cesnas* 'cena' 222.26L, 228.10L, cf. Osc. *kersnu*, Umbr. *šesna*), and COSMIS itself, in our text, urges caution.

⁵ Note also Mancini's discussion (1981: 367n7) of *praeciamitatores* (Festus 292.3L; P.F. 293.1L), which may also point to an *ā*-verb **mitāre*.

1.2. The above considerations lead to the following preliminary conclusions about MITAT: it is a 3sg. pres. indic. form of a "first conjugation" verb, meaning roughly 'gives'; and it is at least as likely to have initial *m- (as opposed to *sm-), therefore deriving from a stem *mitā- or *mitā-. These features converge on an alternative root etymology, which (like almost every idea one might raise in connection with this text) has already been proposed on occasion, i.e. comparing the familiar IE root **meǵ-* (IEW 2. *mei-*, 710; cf. LIV 383), with meanings centering on the notion of 'exchange' (thus e.g. S. Ferri, 1965: 46; Pisani *Testi* p. 7; P. Flobert 1991: 529). The formal and semantic details of this suggestion, however, have never been satisfactorily elucidated, and so the remainder of this section is devoted to that task.

There are, to begin with, two phonological indeterminacies surrounding the structure of the root traditionally notated **meǵ-*, although neither crucially affects the interpretation of MITAT here proposed. If the root actually began with a laryngeal (thus **h₂mei-*), as some data suggest (cf. Mayrhofer *EWAia* Lief. 14 [1993], II.315 and LIV loc. cit.: Ved. *apāmītya-* 'loan, debt', Gk. ἀμείβω 'exchange'), a laryngeal in this position would not in any case vocalize in Latin (i.e. **h₂m-* > Lat. *m-*, cf. [from the same root] Lat. *meāre/-mētāre* 'go back and forth' and *migrāre* ~ ἀμείβω, with non-vocalization as in *Nerō* < **h₂n-*, etc.). And if the root ended with a laryngeal, as other data may suggest (e.g. Pāli *-mināti*, Latv. *mīt*; see Mayrhofer loc. cit.), MITAT in my view derives from a zero grade (see next paragraph), in which case <MIT-> is ambiguous between aniṭ **mi-t-* (> MIT-) and seṭ **miH-t-* > **mit-* (> MIT-).

The somewhat fanciful interpretation of Ferri (loc. cit.) — "Si impegna dinanzi agli dei chi mi cambia' (con un altro oggetto)" — operates with a form *mitat* that is "una parola in veste sicula", adducing the well-known Sicilian material provided by Varro ("si datum quod reddatur, mutuum, quod Siculi *moeton*", L.L. V.179) and Hesychius (μοῖτον ἀντὶ μοίτον παροιμία Σικελοῖς); and for the morphology, Ferri does no more than comment (46n8), somewhat confusingly, on the "interessante ..., del resto regolarissima" vowel gradation in "*mitat*—*moetat*—*mutat*" (sic; a *moetā-* is nowhere attested [except for the obscure *moetas/motas* in Cato's incantation, Ag. 160], although this would be the regular precursor of *mūtā-*, on which further below). Pisani merely offers

the descriptive observation that "[q]uesto *mitāre* è forma in *-ā-* con vocalismo radicale 0 (cfr. §435) accanto a *mūtāre* da **moith-*", while the cross-reference (to Pisani 1952: §435) specifies a zero-grade intensive (more on this point below); and as for the meaning, Pisani believes (also fancifully) that "il significato dev'esser 'vendere'". What remains is to provide a plausible morphological account for a verb *mitā-* meaning 'give' (vel sim.), and this can be accomplished quite straightforwardly. MITAT would be based, in the first instance, on a *tó*-participle **(h₂)mi(H)-tó-* (to **(h₂)mei(H)-* 'exchange'), thus meaning 'exchanged', i.e. 'given (in exchange)'; a participle of precisely this type is almost certainly attested in Av. *fra-mita-* 'verwandelt' (Yt. 19.29; see Mayrhofer EWAia loc. cit.). Indirect evidence for such a form in Latin comes from *mūtāre* '(ex)change' and *mātuus* 'interchangeable', which can most easily be taken as based on a substantivization **mōġi-to-* 'something given in exchange, tit for tat' (directly comparable to the Sicilian material, which may even be borrowed from Italic; see Solmsen 1894: 89n2), itself derived from a zero-grade ptcple. **mi-tó-*.⁶ It is also conceivable that at bottom, SPi. *meitimúm* 'Dankesmal' (AP. 2) and *meitims* 'Dank' (TE. 5) could show a parallel *e*-grade substantivization **méġi-to-* (cf. the suggestively similar formation, though with *o*-grade, in Go. *maipms* 'Geschenk'; see on these forms Eichner 1988-90b: 200). The participle **mi-tó-*, at any rate, could have regularly produced a "frequentative" **mi-t-eh₂(ġe/o)-* (> Lat. *-t-āre*), whence "*mitāre*" and 3sg. MITAT. As for the semantics, one must assume, as often, that the "frequentative" formation was in this case actually factitive; as is well known, the "frequentative" (based on verbal adjectives) partly incorporates formations built with the deadjectival factitive suffix **-eh₂-* otherwise seen in forms of the type *(re)nouāre* 'make new' (: *nouus* 'new'); see Leumann 1977: 547,

⁶ According to this interpretation, Lat. *mūtāre* would be denominative to this **mōġi-to-* (via the productive type *dōno-/dōnā-*), and not, as the form is generally taken, characterized by the poorly-understood root enlargement in *-th-* (< *-t-h₂-* ?) otherwise seen in Indo-Iranian forms like Skt. *mīth-*, cf. Mayrhofer EWAia Lief. 15 [1994], II.376 and Pisani's "**moith-*", cited above, as well as Meiser 1998: 8 and T. Zehnder, LIV 386f. (tellingly with query for the formation said to underlie MITAT, and also acknowledging the possibility of a denominative source for *mūtāre*). Nor, pace Pisani, can a *mitāre* be a zero-grade intensive to an *o*-grade *ā*-verb like *mūtāre*.

Christol 1991: 50. In this way, as a result of perfectly regular developments (partly based on material attested in Latin: see above on *mūtāre*), one arrives at a verb *mitāre* that would mean precisely ‘cause to be given in exchange’, i.e. ‘give (in exchange)’, ‘give’.

1.3. For the sake of completeness, one may adduce the suggestive SPi. form *mitah*, at the beginning of text AQ. 1 ([--?]*mitah* : h[---?]*pa*[...]), especially given the possibility that SPi. final *-h* could continue dental stops (G. Meiser, 1987: 104ff.).⁷ Nevertheless, the possibility of one or two missing letters before the *M*-renders this form more than usually precarious.

2. EN()MANOMEINOM

2.1. H. Eichner, in his recent study of the Duenos Inscription (1988-90), has arrived at a highly original interpretation of the sequence DVENOSMEDFECED ENMANOMEINOMDVENOI (line 3), consequent on his assumptions about the nature of the text — namely, that it is an advertising jingle designed to promote the potential amatory benefits of some cosmetic substance stored in the three chambers of the vase. I remain highly skeptical of Eichner’s account of this sequence (summarized briefly below), for the following reasons:

(i) FECED()EN. Eichner, given his assumptions about the vase, its contents, and the text inscribed on it, takes FECED()EN to mean *infecit* ‘filled me up’ (with perfume, ointment, etc.), commenting (1988-90: 237n97) that anastrophe “ist im Altlatein anscheinend bereits geschwunden”; but such an anastrophe is questionable in the extreme.⁸

(ii) MANŌM()EINŌM. Eichner sets up for EINOM a noun *eino-* meaning ‘manner(s)’, to be extracted from *opinor* ‘consider’; thus MANŌM()EINŌM are gen. pl. (of description), depending on the following dat. DVENOI, the whole phrase meaning ‘for a good man of fine manners’. But even if (as is perfectly possible) *opinor* is to be interpreted as based ultimately on a lost noun *eino-* (presumably **h₁ei-no-*, lit. ‘(a) going’, to **h₁ei-* ‘go’; see in general W.

⁷ In theory, the directly following word h[- could be a demonstrative in **gho-*, cf. HOI()MED()MITAT of the Tibur Pedestal Inscription, 1.3. above.

⁸ Eichner’s citation of Lucr. 5.102 *iacere indu* = *inicere* lends little support.

Krogmann, 1936: 127ff.), the semantic interpretation of this noun as 'manners' (in the sense required) or 'disposition' (vel sim.) is open to serious doubt.⁹

(iii) More generally, Eichner's complex interpretation (involving not only the anastrophe as in (i) above, but also inverted word order in the phrase directly following it) entails abandoning the otherwise straightforward sentence "X made me ... for Y", which had seemed to be one of the clearest sequences to be found in the entire text.

2.2. One can, however, readily concur with Eichner's assessment (1988-90: 237n99) of the two most plausible prior approaches to the sequence ENMANOMEINOM, namely those by R. Thurneysen and H. Rix (the latter following Krogmann and others): "Um ... nur die beiden autoritativsten Stellungnahmen zu berücksichtigen, führe ich an (1) *en mano(m) meinom* 'zu guter absicht, zu gutem vorhaben' (Thurneysen ...) und (2) *en manom einom* 'zu gutem Zweck' (Rix ..., nach Krogmann und anderen)". Both of these are attractive in some respects, but at the same time they are open to certain objections, as follows.

According to Thurneysen (1897: 203ff.), the single spelling of geminates normal for the archaic period allows for a reading EN(M)ANO(M)MEINOM; and the resulting *meinom* would belong with OHG *meinen* 'meinen', OIr. *mían* '(object of) desire', etc. (IEW *mei-no-* 'Meinung, Absicht', 714). While Thurneysen's phrase would produce more or less acceptable sense, the root in question is not otherwise found in Italic, nor is there any principled account as to why *meino-* would have been lost in Latin.¹⁰

⁹ For further arguments against Eichner's interpretation of the phrase, see Petersmann 1996: 670f.; I cannot, however, follow Petersmann (and others) in taking EINOM as a conjunctive particle related to Lat. *enim*, Osc. *inim*, Umbr. *enem*, a view which requires too many unsupported assumptions in terms of both morphology and phonology/orthography.

¹⁰ For the latter point: contrast the verb for 'steal' identified by Rix (as TATOD), in the sequence NEMEDMALOSTATOD: Eichner (op. cit. 216) may be correct in preferring to take this as STATOD (the root has *s*-mobile, in IE terms), partly because its failure to survive into later Latin can be ascribed to a "homonymie fâcheuse" with the ordinary verb for 'stand'.

The Rix/Krogmann version (see Rix, op. cit. 1977) operates with *eino-* < **h₁ei-no-* 'Gang' (cf. 2.1.(ii) above), which again might yield plausible meanings like 'zum Wohlergehen', 'zu einem guten Fortgang', or the like. It nevertheless seems at least a little surprising that a simplex *eino-* 'Gang', entirely unqualified by preverb or other first compound member, could develop a meaning like 'outcome'; in addition to Eng. *outcome*, cf. also (likewise based on verbs of motion) forms like Lat. *eventus/eventum*, or *consequentia*, among many other such items that could be cited.

2.3. The above reservations, while perhaps not fatal to either proposal, at least leave room for an alternative. If one begins from the same word-division EN()MANO(M)()MEINOM as in Thurneysen's account, it is possible to argue for an entirely different interpretation for the word "MEINOM", which (as will be seen directly) may be related in an interesting way to MITAT as interpreted above: a form (acc.) MEINOM could in principle reflect a (substantivized) **mēj-no-*, meaning 'something given in exchange, gift', to the same root **mēj-* 'exchange' already discussed in connection with MITAT. As for the formation of this **mēj-no-*: this would be a form of the familiar type **śuēp-no-* 'sleep', **śés-no-* 'price', **śéḡh-no-* 'conveyance', **déh₃-no-* 'gift', etc. (on which see recently C. Barton, 1993: 554); it is important to note, moreover, that these forms generally have parallel *o*-grades (thus **śuóp-no-*, **śós-no-*, **śóḡh-no-* etc.), and indeed a **móḡ-no-* is itself attested (Li. *maīnas* 'exchange', OCS *měna* 'change', OIr. *maīn* [*moīn*, *muīn*; f. i] 'gift, counter-gift; treasure'), beside phonologically ambiguous forms (e.g. Ved. *menāmenam* 'Tausch um Tausch') and a possible *e*-grade **mēj-no-* in MW *er mwyn* 'for the sake of'. What is of particular importance, however, is that a form **mēj-no-* may in fact be presupposed by Lat. *mūnus -eris* 'duty, service, office, offering', from an immediate antecedent **móḡ-n-es-*.

Lat. *mūnus* belongs with a well-known set of *s*-stem forms with complex suffix *-*n-es-* in Latin and elsewhere, displaying certain intriguing semantic convergences: see e.g. Leumann 1977: 378 (with further references) on "[e]rerbt -nos in juristisch-sozialen Bereich"; in addition to *mūnus*, note also *fūnus* 'burial', *facinus* 'deed, crime', *fēnus* 'interest, debt', *pignus* 'pledge, security', as well as a series of Ilr. terms for 'wealth, property' (Ved. *páritas-*

'abundance', *ápnas-/Av. afnah-* 'property', etc.; here note also Gk. ἄφενος 'wealth' and the semantic discussion of Lubotsky 1998 in connection with Av. *xʷarənah-*). Within Latin, *mūnus* belongs most closely, in semantic terms, with *fēnus* and *pignus*, which probably show **-n-es-* as a secondary formation based on older thematic stems in **-no-*. Thus beside *fēnus* 'interest' (< **'próduce'*), an *e*-grade thematic **-no-* is actually attested in *fēnum* 'hay' (< **'próduce'*); and *pignus* is probably based, in the first instance, on a **'pék/g-no-*" (replacing **pák/g-no-*, to **peh₂k/ǵ-* 'fasten'), as shown by Sandoz 1986.¹¹ In a similar way, Lat. *vulnus* 'wound' can be based on a thematic **ǵélh₂-no-* (→ secondary *"-nos"* stem), to the root **ǵélh₂-* of Hitt. *walḫzi* 'strikes'; cf. the parallel *o*-grade in Hom. οὐλή 'wound, scar' < **ǵol[h₂]-néh₂* (with regular laryngeal loss by Hirt's-Saussure's Law), and for **ǵélh₂-no-* : **ǵol[h₂]-néh₂* cf. **ǵés-no-* 'price' [Lat. *vēnum*] beside **ǵos-néh₂* (ὄνη 'purchase'). Thus a **méǵ-no-* 'gift (rendered in exchange)' (= Duenos MEINO-) can in principle underlie the **mōǵ-n-es-* of Lat. *mūnus* 'service, duty etc.', provided that the *o*-grade of the latter (clearly secondary, in an *s*-stem) could be explained. For this, in fact, there are a number of possibilities. The simplest would be to assume that *o*-grade **mōǵ-n-es-* is due to the influence of an old parallel **mōǵ-no-* (of the type **sǵóp-no-*, **ǵós-no-*, etc.) or **moǵ-nā* (cf. OIr. *maín*) beside **méǵ-no-* (thus Sandoz 1986: 570), as has happened in secondarily *o*-grade *s*-stems like *pondus* 'weight' (cf. themat. *pondo-* in abl. *pondō* 'by weight') or *foedus* 'treaty' (themat. **foedo-* perhaps preserved in *foedi-fragus* 'perfidious'); similarly *modes-(tus)* 'moderate' beside *modus* 'measure'. Moreover, an *o*-grade **moǵ-ni-* is probably old within Latin itself (adj. *mūnis* 'obliging'; Plt., Lucil., Fest.), and the same or a similar form is presupposed by material elsewhere in Italic (U. *muneklu* [**moǵ-ni-tlo-*] 'donation', Osc. *múnífkú* etc. 'communis'); *o*-grade **-moǵ-ni-* is also available in compounds of the type *commūnis* (cf. Go. *gamains*).

The sentence resulting from the above suggestion, then, would read DVENOS()MED()FECED()EN()MANO(M)()MEINOM()DVENOI, and would mean something like "Mr. Good/A good man made me as a fine (exchange-)gift for

¹¹ See now also Lamberterie 1996, with a somewhat different view of the root vocalism of *pignus*.

a good man". Indeed, an interpretation similar to that just proposed appeared in an all-but-forgotten footnote by R. Meringer (1905/6: 271n1), in connection with his discussion of Sic. *moĩrov*, Lat. *mūtāre*, OCS *měna*, among other forms of IE **meǵ-* cited above: "Damit ergäbe sich die Möglichkeit das *en manom(m)einom* der Duenos-Is. zu fassen als: 'zu gutem Tausche, Geschäfte'". Meringer's semantic interpretation, to be sure, differs somewhat from mine, and he said nothing about the formation of this *meinom*, or its possible relationship with MITAT, to which I now turn in more detail.

3. **meinom mitō*

Although MITAT (in line 1) and MEINOM (in line 3) are not syntactically connected, they are linked by their semantic contiguity, which may involve, at least according to the above account, an etymological (as opposed to folk-etymological) connection. With all due reserve, it may be attractive to suggest that the associated pairing of MITAT and MEINOM (i.e. 1 QOI()MED()MITAT "He who gives me ..." // 3 EN()MANO(M)()MEINOM "... as a fine gift") may imply a corresponding *figura etymologica* reconstructable as **meinom mitō*, with the same alliterating format, and with essentially the same meaning, as the standard OLat.+ phrase *dōnom dō* (Euler 1982; here note, incidentally, that *dōnum* [*< *déh₃-no-*] is built with the same formation as that proposed above for **méj-no-*).

One could envision various scenarios in order to help account for the development between this conjectured "Archaic OLat." **meinom mitō* and the later OLat. phrase. Although the later expression could simply have supplanted the earlier, one might more naturally assume that both existed earlier, referring to similar but culturally distinct behaviors (e.g. **meinom mitō* specifically involving exchange/reciprocity); and that eventually, the semantically marked member of the pair was eliminated in favor of the more general expression *dōnom dō*. The essential point here is that some such developments might help explain the loss or replacement in later Latin of both *mitō* [*mitāre*] and *meino-*.¹²

¹² For *mitāre*, one could also imagine, as a complicating factor, the inconvenient homonymy with the regularly-formed intensive to **meitō* (Class. *mittō*): i.e., a *mitāre* 'give [in exchange]

It seems interesting, finally, to observe that the Tibur Pedestal Inscription (probably slightly later than the Duenos inscription, cf. 1.1.) shows a combination of MITAT and DONOM: HOI()MED()MITAT ... D[O]NOM()PRO()FILEOD (see Wachter 1987: §31g on the reading); it is conceivable that this text, with MITAT // DONOM, displays a "transitional" phase, between the MITAT // MEINOM of the Duenos Inscription and the standard OLat. DAT // DONOM that is well-established by the 3rd century. Indeed, other early texts point to a certain laxness in this phraseology (perhaps more marked in non-urban areas; e.g. CIL I² 5 [4th/3rd c.] DONOM.ATOLERE, I² 34 [3rd c.] DONOM PORT, etc.), before DONOM DARE becomes a cliché.¹³

References

- Barton, C. 1993. "Hittite zinni-, tuwarni-, zig and related matters". *JAOS* 113.551-561.
- Christol, A. 1991. "Lexical consequences of a phonetic law (*eye > ē) in Latin verbs", in *New Studies in Latin Linguistics: Selected papers from the 4th International Colloquium on Latin Linguistics* (ed. R. Coleman), 49-61. Amsterdam/Philadelphia.
- Eichner, H. 1988-90. "Reklameiamben aus Roms Königszeit". *Die Sprache* 34.207-238.

would have been formally regular (as an intensive vis-à-vis *meitō 'release, let go, send') but semantically anomalous, whence possibly some pressure to eliminate the form.

¹³ An earlier version of this paper was presented at the 11th International Congress of Greek and Latin Epigraphy (Rome, 18-24 September, 1997), and was published in the *Preatti* of that congress (pp. 133-139). Some of this material was also presented at the 9th International Colloquium on Latin Linguistics (14-18 April, 1997) and at the Workshop on Latin and the Languages of Ancient Italy (7 December, 1996; University of California, Berkeley, Department of Linguistics). To the participants of all of these gatherings, I am deeply grateful for helpful comments and suggestions.

- , 1988-90b. "Ein Heldendenkmal der Sabiner mit trochäischem Epigramm eines pikenischen Plautus des fünften Jahrhunderts v. Chr.". *Die Sprache* 34.198-206.
- Ernout Recueil: A. E., *Recueil de textes latins archaïques*⁴. Paris, 1957.
- Ernout, A. and A. Meillet. 1985. *Dictionnaire étymologique de la langue latine*⁴. Paris.
- Euler, W. 1982. *dōnom dō — Eine figura etymologica der Sprachen Altitaliens*. Innsbruck (IBS-Votr. 29).
- Ferri, S. 1965. "Centuripe - Novilara - Duenos. Osservazioni di metodo archeologico". *PP* 20.39-47.
- Flobert, P. 1991. "L'apport des inscriptions archaïques à notre connaissance du latin pré littéraire". *Latomus* 50.521-543.
- Gordon Intro.: A. E. G., *Illustrated Introduction to Latin Epigraphy*. Berkeley/Los Angeles, 1983.
- IEW: J. Pokorny, *Indogermanisches etymologisches Wörterbuch*. Tübingen/Basel, 1959/1994.
- ILLRP: A. Degrassi, *Inscriptiones Latinae liberae rei publicae*, 2 vols. Florence, 1965², 1963.
- Krogmann, W. 1936. "Alat. einom". *KZ* 63.123-132.
- de Lamberterie, C. 1996. "Latin pignus et la théorie glottalique", in Rosén 1996: 135-152.
- Leumann, M. 1977. *Lateinische Laut- und Formenlehre*. Munich.
- LIV: H. Rix (ed.), *LIV: Lexikon der indogermanischen Verben*. Wiesbaden, 1998.
- Lubotsky, A. 1998. "Avestan *xʷarənah-*: the etymology and concept", in *Sprache und Kultur der Indogermanen* (Akten der X. Fachtagung der indogermanischen Gesellschaft, September 1996, ed. W. Meid), 479-488. Innsbruck: IBS 93.
- Mancini, A. 1981. "Latino mitat". *SE* 49.365-369.
- Mayrhofer EWAia: M. M., *Etymologisches Wörterbuch des Altindoarischen*. Heidelberg, 1986-.
- Meiser, G. 1987. "Pälignisch, Latein und Südpikenisch". *Glotta* 65.104-125.
- , 1998. *Historische Laut- und Formenlehre der lateinischen Sprache*. Darmstadt.

- Meringer, R. 1905/6. "Wörter und Sachen III". *IF* 18.204-296.
- Pennisi, G. 1992. "Il tri-vaso di 'Duenos'". *Studi latini e italiani* 6.7-44.
- Petersmann, H. 1996. "From concrete to abstract thinking: The development of moral concepts in Archaic Latin", in Rosén (ed.) 1996: 665-674.
- Pisani, V. 1952. *Grammatica latina storica e comparativa*². Turin.
- Pisani, Testi: V. P., *Testi latini arcaici e volgari*². Turin, 1960.
- Rix, H. 1985. "Das letzte Wort der Duenos-Inschrift". *MSS* 46.193-220.
- Rosén, H. B. 1957. "Notes on some Early Latin inscriptions, 3." *Mnemosyne* 10.244-246.
- Rosén, H[annah] (ed.). 1996. *Aspects of Latin: Papers from the Seventh International Colloquium on Latin Linguistics*. Innsbruck (IBS 86).
- Sandoz, C. 1986. "Lat. *pignus*: étymologie et formation du mot", in *o-o-pe-ro-si. Festschrift für Ernst Risch zum 75. Geburtstag* (ed. A. Etter), 567-573. Berlin/New York, 1986.
- Solin, H. 1969. "Zur Datierung ältester lateinischer Inschriften". *Glotta* 47.248-253.
- Solmsen, F. 1894. *Studien zur lateinischen Lautgeschichte*. Strassburg.
- Thurneysen, R. 1897. "1. Die Duenos-Inschrift, 2. Siculisch, 3. Zur Umschreibung des Lykischen". *KZ* 35.193-226.
- Wachter, R. 1987. *Altlateinische Inschriften*. Bern/Frankfurt am Main/New York/Paris.

Bengt Löfstedt

David Crystal's *The Cambridge Encyclopedia of Language* (Cambridge University Press, second edition, 1997) is a useful textbook, although the title "The Cambridge Encyclopedia of the English Language" would have been more appropriate¹; everything in it centers around the English language and it seems that only for the sake of curiosity other, foreign and strange languages like Tonga, Arabic or German are cited. The first edition appeared in 1987 and has been widely used as a textbook in different universities. We have been waiting for a new edition for some time and we are happy that it has just appeared. Some improvements and additions can still be made, however.

P. 10. Already the ancient Romans replied to a sneeze with a good wish: Petronius, *Satiricon* 98 *Giton ... ter continuo ita sternutavit, ut grabatum concuteret; ad quem motum Eumolpus conversus salvere Gitona iubet*. In Swedish another Latin good wish has survived from the Middle Ages in the same context: *Prosit*.

11. Instead of the inane ball-bouncing rhyme quoted in the chapter "Power of Sound", why not choose *Eeney, meeney, miney, moe*? It is interesting, because American girls, docile and politically correct, have changed the original sequel *Catch a nigger by the toe; if he hollers, let him go* to the meaningless *Catch a tiger...*, although tigers do not have toes and do not holler.

52. It is noted that in Arabic one answers to a greeting by adding to it. It can be mentioned that Mohammed actually ordered that it be done so: *The Koran* (translated by N. J. Dawood, Penguin Books 1990) 4:86 (p. 70) *If a man greets you, let your greeting be better than his*.² Prof. H. Rosén (Jerusalem) informs me that one finds the same custom in Israel: to a greeting *Good morning* the answer is often *Good and blessed morning*. But this is not characteris-

¹ Mr. Crystal published, in fact, a book with this title in 1995, which is rather similar to the book under consideration in format and contents.

² My son, Torsten Löfstedt, has pointed this out to me.

tic of Semitic languages only. In Modern Irish, greeting and answer can be: *God and Mary to you!* — *God and Mary to you and St. Patrick!* (M. Dillon & D. O'Cróinin, *Teach Yourself Irish*, London, 1961, p. 40); cf. Spanish *Buenas tardes!* — *Muy buenas!*; Old French examples are quoted by Leena Löfstedt, *Neuphilologische Mitteilungen* 79 (1978), 210 f.³

88. Six different kinds of grammars are enumerated: descriptive, pedagogical, prescriptive, reference, theoretical, traditional. What about historical grammars?

88. R. Quirk, S. Greenbaum, G. Leech, and J. Svartvik, *A Comprehensive Grammar of the English Language* (1985; 1779 pp.) is characterized as "probably the largest grammar produced for any language". Has Mr. Crystal forgotten O. Jespersen's *Modern English Grammar* (Heidelberg 1922-49) in seven volumes and H. Poutsma's *A Grammar of Late Modern English* (Groningen 1914-29) in five fat volumes? As for other languages, I draw his attention to H. Paul's *Deutsche Grammatik* (Tübingen 1968) in five volumes, Kr. Nyrop's *Grammaire historique de la langue française* (Copenhagen 1914-30) in six volumes, and Ph. Plattner's *Ausführliche Grammatik der französischen Sprache* (Freiburg/Briesgau 1912-17) in five volumes with more than 2300 pages; just the Latin morphology by F. Neue & C. Wagener (*Formenlehre der lateinischen Sprache*, Leipzig 1902-05) in four volumes has 3079 pages. It is a good idea to look around a little, before making sweeping general statements.

91. "There are no word spaces in the 4th century AD Greek *Codex Sinaiticus*. Word spaces were a creation of the Romans." First, in the oldest Latin texts *scriptio continua* was the rule. Second, the use of word-dividing puncts began quite early in Greece and appears side by side with *scriptio continua* from the oldest Greek inscriptions on. When the spaces between words

³ C.-C. Ehler in *Ord och struktur. Studier i nyare svenska tillägnade Gun Widmark* (Uppsala 1980) p. 431 maintains that a Swede when replying to a greeting repeats the greeting unchanged and that a change would be interpreted as a joke or a correction. That is not true. It is rather my experience that one often changes the greeting a little, e.g. by doubling it or by adding a suffix: *Tjänare!* — *Tjänare, tjänare!* or *Hej!* — *Hejsan!*. If one just repeats the greeting, it is an indication that no further conversation is wanted. The answer to *God natt!* ('Good night!') is often not only *God natt!* but *God natt. Sov gott!* ('Good night. Sleep well!').

were introduced in Byzantine times, it is not necessary to assume Roman influence; see E. Schwyzer, *Griechische Grammatik* 1 (Munich 1953) p. 148.

99. "English has a single pair of response words that can be used to reply to all questions ... *yes* and *no*." As a contrast, Welsh is mentioned with an indefinite number of replies, since the word of the question is repeated. It could be added that the latter type is characteristic of many archaic languages like Latin and Finnish, and that there are traces of it in English in the answer *I do* to the question of the pastor at weddings and of the judge at oath taking. It is also worth mentioning that in some languages there are three replies, e.g. German *ja*, *nein*, and *doch* (the latter is used when the question is negated), also in Swedish (*ja*, *nej*, *jo*) and French (*oui*, *non*, *si*).

112. As a foreign-language equivalent to the English family name *Smith* is mentioned i.a. Spanish *Hernández/Fernández*. This is completely wrong. The Spanish name has nothing to do with any word for 'smith' (Spanish *herrero*). *Hernández* is a patronymicon from *Hernando*, German *Ferdinand* < Gothic *Fridunand*- (see Elda Morlicchio, *Antroponimia longobarda a Salerno nel IX secolo*, Naples 1985, 159 f.).

114. Mr. Crystal writes that placenames derive from "memorable incidents or famous events, such as a battle, e.g. *Waterloo*, *Crimea* ... ". I suppose and hope that he is thinking of an English placename *Waterloo*, although this is not mentioned; after all, there is the Flemish placename *Waterloo*, after which the battle is named. But what about *Crimea*? I cannot on any map find any other *Crimea* (*Krim*) than the one in Southern Ukraine, which certainly is not called after some memorable event. (According to M. Vasmer's Russian etymological dictionary from 1967 *Krim* is a Tartar/Turkish word, meaning originally 'ditch' or 'wall'.)

115. It is stated that "more time is spent deciding the name of a new product than on any other aspect of its development" and a horror story is told to show how long it can take to come up with a new, legally safe name. In Sweden a company 'Scriptor' has been in business for decades inventing new brand names and checking on proposed ones. It seems strange that there is no such company in Great Britain.

118. We read about misunderstandings which arise because (English) men and women mean different things with movements of the head and in-

terjections. If we cross the borders to non-English speaking peoples, we find, e.g., that in Arab countries a European could encounter still greater difficulties: there one nods the head to say *no*. See also the classic paper by Roman Jakobson 'Motor signs for Yes and No', in *Language in Society* 1 (1972), 91 ff.

208. "The use of shorthand died out in the Middle Ages." No, the Tironian notes were still widely used in the Middle Ages. (Professor David Ganz, London, is preparing a catalog of all Medieval Latin manuscripts with Tironian notes.⁴)

299. As examples of ablaut or vowel gradation are listed *foot* — *feet* and *take* — *took*. Oh no! *Feet* is Umlaut of *foot*, not Ablaut. Elementary, my dear Crystal!

367. It is stated that Frisian is "spoken in several dialects in the northern part of Schleswig-Holstein". It is mainly used in parts of the Netherlands.

407. As an example of sign language one could also mention the signs used by commodity traders in Chicago: they move their hands forward to indicate 'sell', they raise three fingers to indicate three items, etc.

⁴ See David Ganz' paper 'On the history of Tironian notes' in Peter Ganz, *Tironische Noten* (Wiesbaden 1990) p. 36 ff.

Recent Work from St. Petersburg, I
(Classical and Indo-European Linguistics, Celtic Studies)

Brent Vine

Thanks to the kindness and generosity of Professor Nikolaj N. Kazanskij, the UCLA Program in Indo-European Studies has recently received copies of a number of new publications in Classics and Indo-European studies from St. Petersburg, mainly from the Institute of Linguistic Studies of the Russian Academy of Sciences. It is good to see that despite the often difficult circumstances under which scholarship must still be conducted in Russia, important work continues to be produced from St. Petersburg, which has a long and distinguished history in the annals of linguistic science. Especially since some of these publications may not be readily available (some of them have been brought out in extremely limited editions), the Program in Indo-European Studies takes pleasure in presenting the following brief annotated survey, which focuses on material of particular interest to Indo-European studies. (See also the immediately following note by V. Ivanov on two recent works in the areas of Balkan studies and Slavic linguistics and ethnolinguistics.)

1. *Klassičeskie jazyki i indoevropskoe jazykoznanie. Sbornik statej po materialam čtenij, posvjaščennyx 100-letiju so dnja roždenija professora Iosifa Moiseeviča Tronskogo* [*The Classical Languages and Indo-European Linguistics. Papers commemorating the 100th anniversary of the birth of Prof. Iosif Moiseevič Tronskij*] N. N. Kazanskij et al. (eds.); Russian Academy of Sciences, Institute of Linguistic Studies; St. Petersburg, 1998. 287 pp. [ISBN 5-88141-038-6]

Pride of place in the present survey belongs to this volume dedicated to the memory of the distinguished Russian philologist I. M. Tronskij (1897-1970), who authored a series of fundamental handbooks of Classical and Indo-

European linguistics and philology (e.g. Tronskij 1953, 1960, 1962, 1967), as well as numerous articles on these and other subjects. It is not an exaggeration to claim, in the words of the blurb characterizing the volume, that Tronskij's work served as the foundation for a whole generation of subsequent scholarship.

The volume contains 35 contributions, of which 33 are in Russian (one with summary in French); an article on a passage in Horace is in German, and the volume includes a touching fourteen-line poem in Latin elegiacs, composed for the 40th wedding anniversary of Tronskij and his wife Marija Lazarevna. The latter piece is one of seven items of "Memorabilia" that open the collection, including an informative tribute to Tronskij's work on Greek and Latin literature by N. A. Čistjakova, who rightly insists (p. 40) that Tronskij "was neither a linguist nor a literary scholar; he was a philologist".

Most of the remaining papers address issues focused chiefly on Greek and Latin language and literature, including areas of special interest to Tronskij, such as the history of Greek and Roman grammatical thought, the nature of the Greek accent, and problems of Latin lexicography. As properly indicated, however, by the title of the volume, a number of the papers range beyond Greek and Latin to topics that include a broader Indo-European perspective. Of the latter, and of those papers on the Classical languages with a historical linguistic emphasis, the following may be singled out:

- N. N. Kazanskij contributes a lengthy and compelling position piece on the importance of "Theoretical grammar of Greek and Latin and its place in contemporary Classical philology" ["Teoretičeskaja grammatika drevnegrečeskogo i latinskogo jazykov i ee mesto v sovremennoj klassičeskoj filologii", 110-123]. Kazanskij laments the lack of adequate training in theoretical linguistics at the upper levels of instruction in Greek and Latin, describing a situation in Russia with a sadly familiar ring to it here in the States. Those engaged in the training of scholars in Indo-European linguistics, in Russia or anywhere else, will surely applaud Kazanskij's eloquent argumentation about the value of linguistic theory (he singles out such areas as variation theory, linguistic typology, dialectology, phonetics and phonological theory, syntactic analysis) for the study of Greek and Latin.

• Latin and Italic linguistics occupies a prominent place in the volume, in keeping with Tronskij's significant contributions in this area. There are two papers on historical and historical/comparative morphology:

In "K predstorii glagol'noj sistemy v italijskix jazykax (vtoričnoe okončanie 3 lica edinstvennogo čisla -d)" ["Towards the prehistory of the Italic verbal system (the secondary ending 3 sg. -d)", 130-134], B. B. Xodorkovskaja argues (partly on the basis of data from Lycian and Luvian) that the Italic 3 sg. secondary ending -d (Osc. kahad, OLat. FECED etc.) is an archaism. The situation has recently been examined in much more detail, and with a similar conclusion, by D. Ringe (1997:135-8), who shows that "no phonemic contrast between word-final *-t and *-d can be reconstructed for PIE" (135, comparing already Schwyzler 1939:409), and that the Italic and Anatolian data (together with other facts) lead to the conclusion that the secondary ending normally reconstructed as *-t was already *-d in PIE.

For the nominal system, Ju. V. Otkupščikov ("Iz istorii latinskogo sklonenija" ["From the history of Latin declension", 134-138]) disputes the alleged influence of *i*-stem inflection on consonant stems in the history of Latin, arguing that the replacement of nom. pl. *-ēs by *-ēs in consonant stems owes less to *i*-stem nom. pl. *-ej-es (> -ēs) than to influence from acc. pl. -ēs (citing also other nom./acc. interactions in the history of each of the other Latin declensional classes).

The two remaining linguistically-oriented papers on Latin are as follows:

A. I. Solopov contributes a brief note on the "Etymology and original meaning of Lat. *culpa*" ["Ėtimologija i pervonačal'noe značenie lat. *culpa*", 183-5]; his solution, while semantically attractive (originally 'debt, obligation', cf. the *(s)kel- of Go. *skulan*, OE *sculan* 'schuldig sein', Li. *skel(i)ti* 'id.', OHG *scylt* 'Schuld' etc., with *s*-less forms in Baltic), raises interesting questions about the nature of the suffixation or enlargement via *-p- in Lat. *culpa*, for which Solopov compares Lat. *pulpa* 'lean meat, flesh' beside *poliō* 'polish' (a connection which Solopov has defended elsewhere) and variations of the sort Gk. μέλος/μολπή 'song'.

T. A. Karaseva's "Principy rekonstrukcii i tolkovanija drevnejšix latinskix nadpisej" ["Principles of the reconstruction and interpretation of the

oldest Latin inscriptions", 200-212] contributes a detailed analysis of some aspects of the Archaic Latin "Lapis Satricanus" of about 500 B.C. (CIL I² 2832a). Karaseva challenges the reigning view that the initial sequence]IEISTETERAI contains a 3 pl. perf. verb form STETERAI 'steterunt'; I have long felt, likewise, that this by now standard interpretation is not as ironclad as it is generally made out to be. But Karaseva's bold suggestion to reinterpret the sequence TERAİ as (Greek) ΓΕΡΑİ (i.e. dat. of γέρας 'prize, gift', hence equivalent to Lat. [dat.] DONO) faces, in my view, serious difficulties, paleographical and otherwise, though her argumentation is incisive and the piece contains a number of interesting observations.

• Finally, three papers address topics in Indo-European poetics and mythology. K. G. Krasuxin, in "O nekotoryx morfosintaksičeskix arxaizmax (na materiale gomerovskix i vedičeskix formul)" ["On some morphosyntactic archaisms (based on Homeric and Vedic formulaic material)", 139-148], erects a great deal of theoretical apparatus in order to explore, in a way that is by now rather conventional, the formulaic behavior of Hom. δῶ 'house'. Setting aside certain lapses,¹ and granting the archaism of the morphosyntactic behavior associated with this word in Homer (which Krasuxin ably demonstrates), his ultimate claim (143) that "genitive + δῶ can be considered a direct continuation of an Indo-European attributive syntagm and that we can assume for the protolanguage the availability of formulas" of the sort *diwós dom, *ḡ-uidós dom (etc.) rests on very little indeed: not every Homeric formula can be retrojected *tel quel* into the Indo-European past. The most interesting part of the discussion, however, concerns Krasuxin's suggestions (143-4) as to how such formulaic behavior (at some pre-Homeric stage) might help to explain the longstanding problem of the anomalous circumflex accentuation of δῶ.

Before turning to mythology, we may also mention that A. L. Verlinskij's long disquisition on "The source of the debate on the origin of

¹ Two examples: despite Krasuxin (142), Myc. *do-po-ta* does not authorize an inherited gen. *dóm-s; and in his discussion (143) of the two genitives ('Αιδός and 'Αἶδο) of 'Αἶδης, Krasuxin claims that the distribution of these forms together with their associated variants for 'house' ('Αιδός δῶ# vs. 'Αἶδο δόμον/δόμων) has to do with the relative chronology of their morphological make-up, a claim that is undermined by a failure to consider the factor of meter.

language in early Greek literature" ["Načalo spora o vzniknoenija jazyka v drevnegrečeskoj literature", 47-79] concludes (77-8) with a rather superficial attempt to refute V. V. Ivanov's conception of the IE "myth" surrounding the well-known phrase reconstructable for PIE as **(H)nóm̥n̥* (or **h₁néh₃m̥n̥*, etc.) *d^heh₁-* in its connection with early attempts to grapple with the origin of language (cf. Ivanov 1964, and Gamkrelidze-Ivanov 1984:833, the latter reference miscited by Verlinskij [78n83] as "p. 837"). Verlinskij's criticism (78n84) that some of Ivanov's data come from the 10th maṇḍala of the Rīg-Veda merely betrays a lack of sophistication with this sort of material and with the methodology of Indo-European mythological/poetic reconstruction: the so-called "popular" hymns of the 10th maṇḍala, despite the lateness of their actual composition, often preserve material of great antiquity (as do documents in other IE branches from much later times); nor is the Rīg-Vedic evidence, in any event, restricted to the 10th maṇḍala.²

In the area of mythology, T. V. Toporova ("Drevneislandskij Mimir v indoevropejskoj perspektive" ["Old Icelandic Mimir in Indo-European perspective", 254-267]) offers a detailed survey of the attributes and underlying nature of the Old Icelandic mythological figure Mimir (Mími, Mímr), drawing detailed comparisons with a variety of similar figures in Greek mythology (esp. Mormō, Lamia, and the Erinyes), with some associated etymological analysis and speculation. In a much shorter compass and in a still more speculative vein, V. P. Kalygin raises the question of a possible Old Irish-Rig Vedic onomastic comparison ("Dr.-irl. Fir Bolg i dr.-ind. Bhṛ̥gu-, Bhṛ̥gavaḥ: fragment indoevropejskoj mifologičeskoj onomastiki?" ["Old Irish Fir Bolg and Old Indic Bhṛ̥gu-, Bhṛ̥gavaḥ: a fragment of Indo-European mythological onomastics?", 267-270]).

² See now Ivanov 1998[1976]:606ff., with discussion (607-8) of Tronskij's own contribution to the understanding of the Platonic and Presocratic reflections of this material.

2. Antičnyj mir: Problemy istorii i kul'tury. Sbornik naučnyx statej k 65-letiju so dnja roždenija prof. È. D. Frolova. [The Ancient World: Problems of History and Culture. Scholarly papers collected for the 65th birthday of Prof. È. D. Frolov] I. Ja. Frojanov et al. (eds.); St. Petersburg State University Press; St. Petersburg, 1998. 458 pp. [ISBN 5-288-02074-4]

This magisterial Festschrift contains thirty contributions, mainly on topics in Greek and Roman history and historiography and on the history of Classical studies. The first two papers, however, intersect with Greek historical linguistics/poetics, and can be sketched in more detail here.

N. N. Kazanskij, pursuing further his recent work on early Greek poetry,³ offers a wide-ranging study of the famous "ship of state" metaphor ("K predystorii metafory gosudarstvo-korabl' v grečeskoj kul'ture" ["Toward the prehistory of the metaphor *ship of state* in Greek culture", 25-34]). The central and most original contribution involves a suggested reinterpretation of the Mycenaean name *O-ti-na-wo* (PY Cn 285.14) as /Orthi-nāwos/ 'he who guides the ship' (vs. the traditional /Orti-nāwos/ 'he who impels ships [in(to) battle]'), thereby raising the possibility that the metaphor in question was already established by Mycenaean times. Although Kazanskij's interpretation of *O-ti-na-wo* must be considered quite uncertain,⁴ his discussion of early Greek metaphor and onomastics remains valuable.

Ju. V. Otkupščikov's "ΑΠΟΛΛΩΝ (mifologo-ètimologičeskij ètjud)" ["ΑΠΟΛΛΩΝ (a mythologico-etymological study)", 35-42] seeks to defend a new etymology for the name "Apollo" (and especially its older Dor. form 'Απέλλων) based on the present participle ἀπελῶν to ἀπελάω 'drive away, expel, ward off'. There are, however, numerous difficulties with this account which Otkupščikov fails to address: he provides, for example, no explicit source for

³ Cf. his *Principles of the Reconstruction of a Fragmentary Text (New Stesichorean Papyri)* (St. Petersburg 1997; in English, with extended Russian summary).

⁴ Despite Kazanskij (32n16), the lack of initial *w-* in the Myc. form is extremely troubling, even without Homeric evidence for digamma in *δρῶς* (cf., however, Lac./Arc. *φορᾶσια* and similar dialectal forms, not to mention Myc. *Wo-ti-jo*, probably /Worthios/).

the gemination,⁵ nor is it made clear how a participial form in *-οντ-* could have developed *-ων/-ωνος* inflection secondarily. There is again, however, some interesting associated discussion of Apollonian attributes and epithets, even if the etymological analysis itself is unsatisfying.

3. Jazyk i kul'tura Kel'tov. Materialy VI kollokviuma (Sankt-Peterburg, 16-17 nojabrja 1998 g.). [*Celtic Languages and Cultures. Materials from the VIIth Colloquium; St. Petersburg, 16-17 November 1998*] A. I. Falileev (ed.); Russian Academy of Sciences, Institute of Linguistic Studies and Russian Association of Celtic Scholars; St. Petersburg, Nauka, 1998. 68 pp. [ISBN 5-02-028402-5]

This volume contains 23 contributions (nearly all of them short abstracts of conference presentations), organized alphabetically by author. (Four items are in English, one — by far the longest — is in German, and the rest are in Russian.) Most of the papers concentrate on “language” (14, vs. 9 addressing “culture” in various ways). In general, the titles of the papers provide an adequate indication of their contents, as follows.

- Among the linguistic items, the following involve Proto-Celtic and/or Indo-European concerns:

E. G. Vol'skaja, “Glagol'nye formy v tekste iz Botorrity” [“Verbal forms in the Botorrita text”, 8-10] (actually referring to “Botorrita I”);

N. N. Kazanskij and A. I. Falileev, “Obščekel'tsk. *klāro-, greč. κλήρος: indo-evropejskoe obosnovanie” [“Proto-Celtic *klāro-, Gk. κλήρος: the Indo-European basis”, 10-13];

N. A. Nikolaeva, “Spornaja ètimologija nekotoryx drevneirlandskix oboznačenij umiranja” [“The disputed etymology of some Old Irish terms for death and dying”, 32-3] (*bás, bath, at-bath, at-bail*);

A. I. Solopov and V. P. Kalygin, “Dr.-irl. laith ‘pivo’, lat. Latium i dr.” [“Old Irish laith ‘beer’, Lat. Latium and other forms”, 39-42] (Latium not from *stlā- ‘extend’, but from *lat-, as in various terms for liquids et sim.).

⁵ The inexact parallels he provides (40) as well as his ambiguous notation “Απέλ(λ)ων” do nothing to alleviate this problem.

• Most of the remaining language-oriented contributions involve word studies or other broadly philological concerns at the Celtic or einzel-sprachlich levels, including contact phenomena:

O. I. Brodovič and S. V. Voronin, "(Fono)leksičeskoe gnezdo bogey: anglo-kel'tskie kontakty" ["The (phono)lexical word family of bogey: Anglo-Celtic contacts", 4-6] (in addition to *bogey*, also *boggard/boggart*, *pooka/pook/puck*, *bugaboo*, *boggle*, and others);

O. I. Brodovič and A. Davydova, "Anglijskie zaimstvovanija v vallijskom jazyke" ["English borrowings in Welsh", 6-8];

I. V. Krjukova, "Predposylki nekotoryx innovacij v sfere analitizma v irlandskom i drugix kel'tskix jazykax" ["The preconditions for certain innovations of the analytical type in Irish and other Celtic languages", 14-18];

V. V. Larin, "Simvolika ogama" ["The symbolic system of Ogam", 18-20];

V. I. Mažuga, "O priemax raboty irlandskix grammatikov v VII-VIII vekax: peredelka razdel'a o gruppe latinskix nedostatočnyx glagolov v učebnike Xarizija" ["The working methods of Irish grammarians in the 7th-8th centuries: the revision of the section on Latin defective verbs in Charisius' grammar"];

A. R. Muradova, "Popytka opredelit' ponjatie 'Anaon'" ["An attempt to determine the notion of 'Anaon'", 29-32];

A. I. Falileev, "Drevnebretonske glossy: nekotorye složnosti interpretacii" ["The Old Breton glosses: some difficulties of interpretation", 56-9].

• Finally, three reports concern various Celtic "language questions", including a report on the "GPC":

H. L. C. Tristram, "Das Forschungsprojekt 'The Celtic Englishes' in Potsdam", 44-56;

D. Phillips, "The State of the Language", 59-62 (on Welsh);

A. Hawke, "Geriadur Prifysgol Cymru: A Dictionary of the Welsh Language", 62-4 (see the dictionary's web site at <http://www.aber.ac.uk/~gpcwww>, and note the additional updates at [UCLA] *Indo-European Studies Bulletin* 7.2 [May/June 1998] 16).

• The "cultural" pieces focus mainly on literature and folklore; they are as follows:

G. Bondarenko, "The significance of *geis* for the reign of Conaire Mór" (3-4);

K. R. Kobrin, "Kak sdelana tret'ja glava vtoroj knigi 'Opisanija Uèl'sa' Geral'da Kambrijskogo" ["How the third chapter of the second book of Giraldus Cambrensis's 'Description of Wales' was composed", 13-14];

T. A. Mixajlova, "'Rokovoj čas': Transformacija motiva *trojnoj smerti* v irlandskoj fol'klornoj tradicii" ["'The fated hour': The transformation of the *triple death* motif in the tradition of Irish folklore", 27-9];

A. P. Owen, "The Poets of the Nobility — Beirdd yr Uchelwyr" (33-5);

E. A. Patrik and V. G. Bezrogov, "'Odisseja' Gomera v paradigme irlandskoj sagi" ["Homer's *Odyssey* in the framework of the Irish saga", 35-7];

A. S. Popenskov, "Byla li 'glavnaja žena' edinstvennoj 'glavnoj ženoj'?" ["Was the 'chief wife' the only 'chief wife'?", 37-9] (on *cétmuinter*);

T. V. Toporova, "O dvux tipax znaniya u kel'tov i germancev" ["On two types of knowledge among the Celts and the Germanic peoples", 42-4];

S. V. Škunaev, "Potustoronnij mir — edinstvo vremeni, mesta i dejstvija" ["The other world — a unity of time, space and action", 64-5] (conceptions of the other world in medieval Ireland);

V. Èrlixman, "Keridven — ved'ma ili boginja?" ["Ceridwen — sorceress or goddess?", 65-6].

References

Gamkrelidze, T. V. and V. V. Ivanov. 1984. *Indoevropskij jazyk i indoevropejcy*, vol. II. Tbilisi.

Ivanov, V. V. 1964. Drevneindijskij mif ob ustanovlenii imen i ego parallel' v grečeskoj filosofii, in *Indija v drevnosti* (ed. V. V. Struve and G. M. Bongard-Levin), 85-95. Moscow.

-----, 1998. *Izbrannye trudy po semiotike i istorii kul'tury*, t. I. Moscow.

- Ringe, D. 1997. On the origin of 3pl. imperative *-ντων*, in D. Q. Adams (ed.), *Festschrift for Eric Hamp*, vol. II, 129-143 (JIES Monograph 25; Washington, D.C.).
- Schwyzler, E. 1939. *Griechische Grammatik*, Bd. I. Munich.
- Tronskij, I. M. 1953. *Očerki iz istorii latinskogo jazyka*. Moscow-Leningrad.
- 1960. *Istoričeskaja grammatika latinskogo jazyka*. Moscow.
- 1962. *Drevnegrečeskoe udarenie*. Moscow-Leningrad.
- 1967. *Obščeeindoevropskoe jazykovoe sostojanie (Voprosy rekonstrukcii)*. Leningrad.

Recent Work from St. Petersburg, II
(Balkan Studies, Slavic Linguistics and Ethnolinguistics)

Vyacheslav V. Ivanov

1. Malyj dialektologičeskij atlas balkanskix jazykov. Materialy vtorogo rabočego soveščanija. Sankt-Peterburg, 19 dekabnja 1997 g. [*Small Dialect Atlas of the Balkan Languages. Proceedings of the Second Workshop. St. Petersburg, December 19, 1997*]. A. N. Sobolev (ed.); Russian Academy of Sciences, Institute of Linguistic Studies, Department of Comparative Indo-European and Areal Studies; St. Petersburg, 1998. 139 pp.

This booklet, issued in a printing of 100 copies, contains materials related to the work on an *Atlas* of Balkan languages, a venture conducted jointly by specialists from both St. Petersburg (Linguistic Institute and University) and Moscow (Institute of Slavic and Balkan Studies).

The first part of the book (pp. 6-26) is dedicated to the theoretical problems of compiling interlingual regional atlases. G. P. Klepikova, who has been one of the principal authors of the *General Carpathian Dialect Atlas*, summarizes the main results of this work, which is almost finished (five of seven projected issues have been published). In her article "From the experience of work on plurilingual linguistic atlases" (pp. 6-15), she comes to the conclusion that the Carpathian linguistic community as revealed through this work is characterized by common words and semantic isoglosses reflecting cultural features shared by speakers of all the languages of the area. Such common elements are expressed by similar semantic devices in different languages: thus the name for a plough serving to prepare the ground (*Vorpfzug*, Rus. *predplužnik*) incorporates the word for "iron": Romanian *fieru plugu-lui*, Ukrainian *perédne žel'izo* (lit. "frontal iron"), Eastern Slovak *spodn'e železo*, Transylvanian Hungarian *hósszuvsq*, Dialectal Serbian (in Romanian Banat) *dlgo jelézo* (p. 11).¹

¹ These data might be an important addition to the classical *Wörter und Sachen* study of Haudricourt and Delamarre 1986, pp. 181-182 (*Vorpfzug*, related pictures and terms from

A. N. Sobolev, in an article "On the principles of the project of a *Small Dialect Atlas of the Balkan Languages*" (pp. 16-26), gives a brief survey of the discussion surrounding the Balkan linguistic league (for which a comparison to other similar problems, such as the Meso-American zone, as discussed in recent publications, might be useful). Former atlas projects are criticized as lacking theoretical background. In a future atlas, syntactic, lexical and cultural data from selected points on the Southern-Slavic, Albanian, Greek, Turkish and Eastern-Romance dialectal territories will be collected by interviewing speakers and transcribing dialectal texts.

The second part of the collection contains works on Balkan dialectology (pp. 27-77). M. I. Domosileckaja discusses the main aspects of the "Albanian-Eastern-Romance Comparative Notional Dictionary of Cattle-Breeding" that she has been compiling (pp. 27-36). The dictionary is based on a comparison of Albanian and four Eastern Romance languages: Romanian, Istro-Romanian, Aromanian and Megleno-Romanian. 478 isoglosses have been found. Those which include all five languages reflect probable Paleo-Balkan substrate words, which is considered to be evidence of a common substrate for all the Eastern-Romance languages and of its closeness to a Paleo-Balkan ancestor of Albanian (p. 35). The distribution of Latin words among the isoglosses points to a common territory in which all the corresponding ethnic groups had been Latinized.

S. V. Zajceva's article "From the results of a systematic analysis of Stokavian lexis" (pp. 37-48) provides a critical appraisal of modern attempts in this area, after the brilliant beginning by Koradžić. The author has compiled a dictionary-atlas of the names of domestic animals that includes 283 semantic units and 597 lexical items. Five of them belong to a specific vocabulary characterizing the Balkan-Carpathian area.

A. Ju. Rusakov's article "On the classification of the Romani (Gypsy) dialects of Europe" (pp. 49-58) presents a brief sketch of existing points of view; the author has succeeded in working through some of the most recent studies, although literature on the topic is growing so rapidly that it is difficult to keep up. From the point of view of Indo-European studies, one of the

Central Europe), 311-315 and map VI (the diffusion of plough elements in Europe; the Carpathian area is included into a neighboring zone).

most interesting questions concerns the isoglosses that might reflect original subcontinental differences among Indo-Aryan dialects. In spite of some of the difficulties stressed by the author, the difference between *s*-forms in Vlach *som* "I am" and Central and Northern *hom* (p. 50) can go back to a Middle Indo-Aryan sound change, although its morphophonemic use is considered to be late.²

The article by A. L. Sobolev "The dialects of Eastern Serbia and Western Bulgaria" (pp. 59-77) describes the intermediary zone between Southern-Western and Southern-Eastern Slavic dialects, the atlas of which he has prepared for print. The bundles of isoglosses that characterize major portions of the intermediary area, in which Proto-Slavic **tj*, **dj* became *č*, *ž* (and not *št*, *žd*, as Bulgarian), as well as the various dialects inside it, are circumscribed by enumerating corresponding features.

The third part of the volume (pp. 78-129) publishes the results of recent expeditions. A. A. Novik presents "Materials of an anthropological expedition to Dukaġin (Northern Albania)" (pp. 78-94). A participant in the journey (which took place in September of 1996) was the author's teacher Ju. V. Ivanova. This mountainous area has preserved some interesting features of Northern Albanian culture and language. Words and rites connected to the folk calendar and festivals (pp. 83-86), the birth of a child (p. 86), marriage (pp. 86-89), and death and funerary ceremonies (pp. 89-93) are briefly discussed.

A. A. Plotnikova writes of "An expedition to Eastern Serbia (the village of Donja Kamenica)", which took place in August of 1997 (pp. 95-105). She gives a vivid picture of a multilingual situation in which speakers of a local (Timok or Torlak) dialect (belonging to the above-mentioned intermediary zone) would like to consider it as a separate language different from both Bulgarian and Serbian. Hostile feelings towards Gypsies as strangers who are ritually "impure" are revealed both in beliefs (about a church being made impure by gypsies so that mythological creatures had to purify it, p. 95) and in some expressions (*ciganče* "a child who has died unbaptized", from *cigan-*

² Bakker, Matras 1997, p. XVIII.

"Gypsy", p. 98). Ethnolinguistic data on some other beliefs and rites are briefly mentioned.

I. A. Sedakova provides materials from "An expedition to the Bulgarian village of Ravna (Provadij community, Varna district, Bulgaria)", conducted in August of 1997 (pp. 106-117). She used questionnaires from the projected atlas, and discusses difficulties connected to their structure. Particularly interesting are her remarks on Turkish and Greek elements in the dialectal vocabulary.

A. N. Sobolev publishes "Selected materials on the Central Bulgarian dialect of the village of Gana" (pp. 120-129). From the materials of an expedition conducted in July-August 1996, the author has chosen several fragments of answers to geographical portions of the lexical questionnaire and several ethnolinguistic texts (on March as an angry woman, on the abduction of a bride, etc.).

In the fourth part of the book, A. N. Sobolev publishes a review of volume 1 (1997) of the study *Das slavische Lehngut im Albanischen*, by Xh. Ylli (pp. 130-135). The reviewer insists on the possible role of the areal principle in establishing the chronology of these borrowings.

As a supplement, A. A. Plotnikova publishes "An addition to the 'folk calendar' section of the ethnolinguistic questionnaire of the *Small Dialect Atlas of the Balkan Languages*" (pp. 137-139). Twenty detailed questions are designed to elicit answers on mythology and rituals from speakers of non-Slavic ethnic groups. In them a scheme for a common Balkan ethnolinguistic structure can already be seen.

On the whole, the book produces a favorable impression. The relatively young linguists who have joined in this endeavor are clearly very active and thoughtful. One hopes to see all of those materials that have been readied for publication — maps, dialectal texts and other collected materials, and whole atlases — actually printed as soon as possible. The history of Russian linguistics is full of unfinished projects and lost manuscripts. It would be extremely sad if this sort of history were to repeat itself in this case.

2. Osnovy balkanskogo jazykoznanija. Jazyki balkanskogo regiona. Čast' 2 (Slavjanskije jazyki) [*Fundamentals of Balkan Linguistics. Languages of the Balkan Area. Part 2 (Slavic Languages)*]. A. V. Desnickaja and N. I. Tolstoj (eds.); Nauka Press, St. Petersburg, 1998. 276 pp. [ISBN 5-02-028389-4]

This book (as with its corresponding "Part 1", which preceded it eight years ago [Desnickaja 1990]) is the delayed result of a project put forward by Agnija Vasil'evna Desnickaja, the well-known specialist in Albanian and comparative Indo-European linguistics. More than twenty years ago the project had been discussed in detail, an initial advisory committee was formed (its composition has changed several times since then), and preliminary conferences were held to discuss the theoretical background of the work. As stated in a short preface (p. 3), both the editors died without seeing the completed manuscript. After Desnickaja's death in 1992, the work was interrupted. The main person to revive it and to organize the successful continuation of the first part was A. B. Černjak, whose plan for the volume was realized by a team of authors that included some specialists invited by him. According to the new plan, this volume deals only with the Slavic languages of the Balkans, while the other dialects (such as Turkish, Romani [Gypsy], Armenian and some others) will be discussed in "Part 3", with Eastern Romance and Albanian having been covered in the first part.

The volume opens with a short but quite informative chapter on "The penetration of Slavs into the Balkans", written by P. V. Šuvalov (pp. 5-28). The author combines archaeological data and early written sources to arrive at a reliable picture. A critical survey of existing contradictory theories in a section on "The modern state of archaeological studies of the early Slavs" (pp. 5-8) is based on the safe assumption that an ethnic label attached to an early archaeological culture should be considered suspicious if there are no written texts to support it. According to the author, there are few real traces of Slavic settlements earlier than the VIth c. A.D. We are on safer ground discussing evidence concerning "The advance of the Slavs toward the Danube River between 375 and 527 A.D." (pp. 8-11). A number of Byzantine writers mention Slavic tribes by that time. The author supposes that in the 520's, Slavs had integrated with other ethnic groups, such as Eastern Germanic (Gothic), Eastern

Iranian, Northern Thracian, Hunnic and Turkic Bulgar peoples (p. 9). While linguistic traces of contacts with the first two groups are evident, this cannot be said about the rest, with the notable exception of Thracian-Balto-Slavic correspondences. (It seems strange that Baltic tribes whose close links to Thracians and other Paleo-Balkanic tribes seem clear in the light of studies of the past few decades are not mentioned in this survey.) Established facts testify to the historicity of Slavic raids to the North of the Balkans in 518-544 (pp. 11-12), beyond the Balkan mountains in 545-552 (pp. 13-14), as well as later, in 577-589 (pp. 14-16). As the author shows, by that time Slavs were systematically robbing Balkan areas without settling there. As the Empire became weaker at the turn of the VIth and VIIth centuries, a large Slavic migration took place in 604-657 (pp. 18-22). As a process that can be followed through historical records, this event seems particularly important for Indo-European studies in general, since here a movement that led to a split into several dialects is documented historically.

S. R. Toxtas'ev contributes a chapter on "The oldest documentation on Slavic in the Balkans" (pp. 29-57). It contains a list of ancient ethnonyms and toponyms that have been supposed to be Slavic. One might have preferred that the discussion, which partly continues detailed comments that appeared in a recent collection of ancient materials related to the Slavs (Litavrin 1991), had been conducted in a less subjective tone. The author is probably right in stressing the controversial character of some of the etymologies. Still, it would have been possible to dwell longer on those hypotheses that are reliable, and to reduce some of the polemical portions of the presentation, which have no place in an encyclopedic handbook of this kind. Several points of detail may be mentioned here. Toxtas'ev's remark on a probable Slavic form **Struměnici* rendered as Στρυμονίται (Xth c., p. 39) is not quite clear, since the underlying Paleo-Balkanic term Στρύμων is known from ancient Greek lists of rivers; if it is supposed that the Slavic form was derived from the old name, some additional arguments should be provided. Definitely wrong is the Slavic attribution of Βερεγάβων, allegedly from the Slavic **bergŭ* "mountain" (p. 40). Since this word is a relatively late Germanic borrowing in Slavic, other possible explanations (p. 41) are preferable. The conclusions arrived at concerning the linguistic features of the various words discussed (pp. 45-47) are

not quite realistic, as the number of acceptable Slavic explanations for these names is small and their chronology and spatial distribution vary considerably. Finally, in a section on Slavic elements in Greece (pp. 49-52), the author discusses some corrections suggested by Ph. Malingoudis to the recently reprinted study of Vasmer on this subject (*Die Slaven in Griechenland*², 1970).

Despite some controversial points of view, the first two chapters provide a historical introduction to the study of the spread of the Slavic dialects in the Balkans. As noted in the preface (p. 3), the rest of the book has been written in a different format. Each of the following chapters is structured as an encyclopedic entry on a separate modern language, including characteristics of its structure and its modern dialects, its development and periodization, the nature of the written sources and remarks on the history of its study. The historical sections of these chapters, which continue some of the discussion from the beginning of the book, are intermingled with remarks on the modern linguistic situation, the number of speakers, and other data that might be useful for readers interested only in each particular language. There is a great deal of repetition, some of which seems unnecessary. Thus the origin of the names of some languages is discussed both in the second chapter and in those sections where the corresponding language is described. At the same time, the book lacks a chapter on Old Church Slavonic and its written monuments in the Balkans, a decision which is mentioned (but not explained) in the preface. Although some aspects of this material are discussed particularly in connection to Macedonian, the contribution of the different Slavic dialects to the Old Church Slavonic texts has not been studied in sufficient detail. This makes the historical parts of the book less oriented towards written sources. The book, in sum, is not a unified whole. It can be read rather as a collection of partly intersecting articles dedicated to similar problems. Nevertheless, in spite of this structural defect, the various authors have succeeded in presenting interesting new viewpoints that make reading the book quite rewarding.

A long chapter on Slovene is written by A. D. Duličenko (pp. 58-113). In its historical part, the author accepts the idea of an "Alpine Slavic community" (*alpska slovanščina*, p. 64) that included, besides Slovene, also three

groups of such dialects which, after they had become part of the Serbo-Croatian dialectal unity, received names according to variant forms of the interrogative-relative pronoun (*kaj, ča, što*): Kajkavian, Čakavian, Štokavian (p. 64, less resolutely on pp. 82-84, see also the next chapter written by A. N. Sobolev, p. 120). According to Ramovš's view (as presented by Duličenko), the last-named of these split from the Alpine group earlier than the rest. After the split of Čakavian a Proto-Slovene-Kajkavian subgroup remained. In the course of describing different points of view on this topic, Duličenko makes use of old-fashioned terminology, with reference to a large number of 'protolanguages'. Since for Duličenko (as well as for the other authors of the book) dialects seem to present the real objects of the discussion, it might have been preferable to stick to linguogeographical terminology in describing relations between them, without resorting unnecessarily to "Neo-grammarian" terms.

From the point of view of the Alpine community it is not easy to explain the existence of many isoglosses uniting Proto-Slovene and Proto-Slovak (p. 85). In order to study this problem properly, one should discuss the role of the Hungarian intrusion that divided these two Slavic dialects. Although this might have led to enlarging the geographical area under investigation, without such an approach one cannot arrive at a complete picture of the differentiation of the Slavic dialects.

To the XIth c. belongs the first written document in Old Slovene, the so-called Freising (= Brižin) fragments. Together with many Slovene scholars, the author does not consider them a document of Old Church Slavonic (p. 93). While some new Slovene features are already present in this text, it might nevertheless be important to stress certain very archaic semantic features, such as the meaning of the form *pas-em* "we preserve (oaths)".³ Slovene is an exceptionally archaic Slavic language. Some features of nominal derivation that might be traced to Indo-European elements in Proto-Slavic have been preserved only in Slovene, as for instance *-es- stems like *iž-es-* "yoke". Although, as shown in this chapter, Dualis forms gradually become transformed or disappear, Slovene is still the only Modern Slavic lan-

³ On the similarity to Hittite and Tocharian contexts cf. Toporov 1959; Ivanov 1981, p. 208.

guage that has these forms. From the point of view of the later history of the dialects, which constitutes, to be sure, the main problem for the authors of the volume, such archaisms are less valid than innovations. But if a language presents, as does Slovene, such an unusual balance of archaic and innovating features, there is a need to discuss this rare quality, which surely calls for some explanation. (The Alpine landscape and associated difficulties of communication may be suggested as a possible factor.)

Among recent phonemic structural changes with some typological importance, the gradual disappearance of the phonological feature of palatalization should be noted. At the earliest reconstructed period the opposition of palatalized and non-palatalized consonants (which characterized, according to Roman Jakobson, all the languages of the Eurasian linguistic league) existed in Proto-Slovene (p. 64). In the modern period there remain only two pairs of phonemes with this feature (/n/ ~ /n'/, /l/ ~ /l'/), and even here the feature tends to disappear (p. 69, cf. p. 123 of the following chapter, on Serbo-Croatian).

The chapter on Serbo-Croatian is written by A. N. Sobolev (pp. 114-155). He returns to the problem of the earliest relations between Slovene and Kajkavian (pp. 127-128). Sobolev accepts P. Ivić's view of the relation between the Eastern and Western groups of Southern Slavic dialects (pp. 139-140, where again the term 'protolanguage' is used, in a way that does not seem quite correct, to mean a bundle of isoglosses). This chapter stresses the necessary difference between strictly dialectological and extralinguistic aspects. The author opposes the one-sided view of N. Tolstoj concerning the religious feature as the only differential feature important for determining the border between Serbian and Croatian (p. 126). From the discussion of dialectal and ethnic relationships, it emerges that these might have been studied separately, but only to some extent. In Serbo-Croatian historical dialectology, immense difficulties result from the mass migrations caused by the Turkish conquest (pp. 135-136). One suspects that more recent events may end up producing similar linguistic results. (Unfortunately, older written documents in Serbo-Croatian and Church Slavonic texts with Serbian features are not studied in the volume.)

A chapter on modern Macedonian is written by R. P. Usikova (pp. 156-188), something which has become possible only after the end of Soviet schol-

arly censorship, which made it extremely difficult even to mention Macedonian. In this chapter Macedonian is characterized both in its relation to Bulgarian and other Slavic dialects of the Balkans, and as a language that has acquired features of the Balkan linguistic league. A brief description of Macedonian features in Church Slavonic texts (pp. 162-163) is quite useful, but would have been much more comprehensible if other texts without such features had been discussed; perhaps such an addition can still be incorporated into Part 3 of this series.

The chapter on Bulgarian is written by A. N. Sobolev and A. B. Černjak (pp. 189-245). The section on the ethnic and political history (pp. 189-202) is quite detailed. As a continuation of the description of the written documents (pp. 202-206), the authors provide a valuable supplement (pp. 233-237), listing all Middle Bulgarian texts that have been studied in special publications. For each text, information is supplied as to its date, dialect, and some other features. As most of the texts have been studied either recently or in old and obscure publications, this supplement will become an important working tool for specialists.

Finally, A. D. Duličenko's chapter on "The Language of the Ruthenians in Serbia and Croatia" (pp. 247-272) represents an unusually interesting contribution. Ruthenians moved to these areas only in the XVIIIth and early XIXth centuries. Their language presents especially intriguing features for the theoretical study of the mixture of closely-related dialects. It presents, in particular, a bundle of isoglosses uniting it with Carpathian Ukrainian and Eastern Slovak dialects, and thus appears as a dialect intermediary between the Eastern and Western Slavic areas.

The book, to conclude, contains a number of interesting sections. It deserves high praise for the freedom with which it is written and for its discussions of some of the most difficult questions surrounding the linguistic situation in the Balkans.

References

- Bakker, Peter and Yaron Matras. 1997. "Introduction". IN: *The Typology and Dialectology of Romani* (ed. Y. Matras, P. Bakker, and H. Kyuchkov), pp. VII-XXX. Amsterdam Studies in the Theory and History of Linguistic Science, ser. IV. Current Issues in Linguistic Theory, vol. 156.
- Desnickaja, Agnija V. (ed.). 1990. *Osnovy balkanskogo jazykoznanija*, Čast' 1. Leningrad: Nauka Press.
- Haudricourt, André and Mariel J.-Brunhes Delamarre. 1986. *L'homme et la charrue à travers le monde*. Lyon: La Manufacture.
- Ivanov, Vjačeslav V. 1981. *Slavjanskij, baltijskij i rannebalkanskij glagol. Indoevropskie istoki* [The Slavonic, Baltic and Early Balkan Verb. Indo-European Origins]. Moscow: Nauka Press.
- Litavrin, G. G. (ed.). 1991. *Svod drevnejšix pis'mennyx izvestij o slavjanax* [Collection of the Oldest Written Sources on the Slavs]. Moscow: Nauka Press.
- Toporov, Vladimir N. 1959. "Slovenica". *Voprosy slavjanskogo jazykoznanija*, Vyp. 5. Moscow: Nauka Press.